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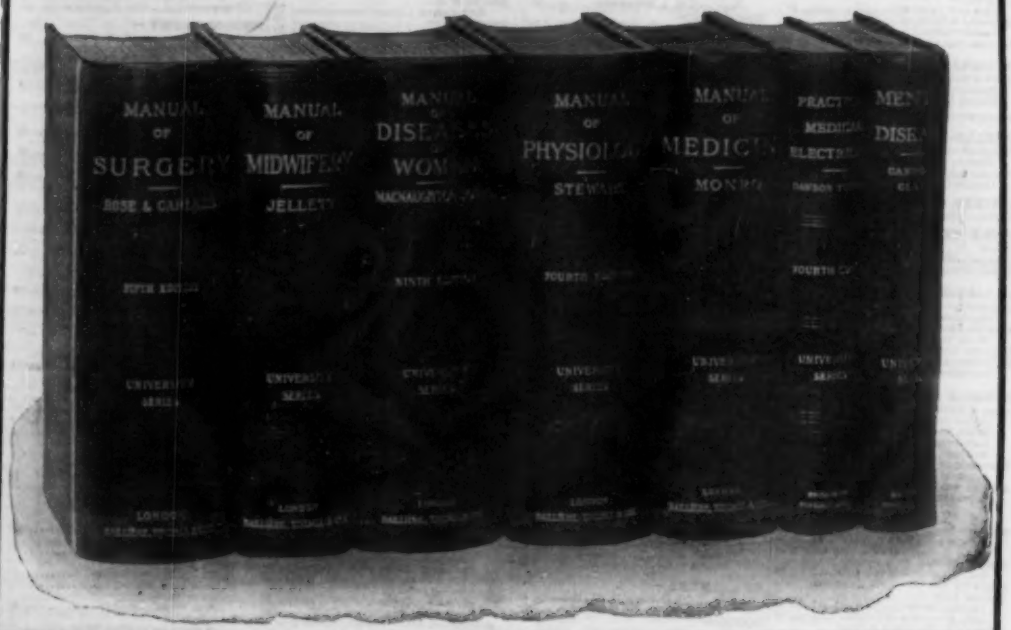

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A Lecture
ON THE
INDICATIONS FOR OPERATION.

Delivered at the Medical Graduates' College and Polyclinic, London, on May 11th, 1905,

BY RUTHERFORD MORISON,
F.R.C.S. ENG. & EDIN.,
SURGEON TO THE ROYAL INFIRMARY, NEWCASTLE-ON-TYNE.

GENTLEMEN,—To prevent sepsis, to arrest hæmorrhage, or to remove a focus of disease—one or other of these things is, in the majority of operations, the purpose of the operator.

PREVENTION OF SEPSIS.

As an illustration of this, the following case may be given of operation after injury to the brain. One afternoon I received by telephone a message asking me to go to see a young man, aged 18 years, who had injured his head and who still bled but not profusely. The message was not urgent; I was to go as soon as convenient. On my arrival he was in the nursery with some younger brothers and demonstrated on the remnants of a toy cannon what had happened. In firing the cannon it exploded and something struck him in the forehead. Part of the cannon was missing. There was a small incised wound on the upper part of his forehead on the right side still slowly oozing. If I have not already conveyed the impression that he appeared to be no worse for the accident let me say now that he was able to walk along with me to a private hospital without help or difficulty and to run upstairs. I did what we *always* do as a matter of routine—introduced a sterilised probe into the cleansed wound. A finger is the best probe but this wound was quite small. On introducing the probe I found to my horror that it went through a hole in the skull. To prevent wound infection I decided at once to operate—to trephine. On removing a disc with the trephine a hole was found in the dura mater and on introducing a probe through this small pieces of bone and the breech of the cannon were discovered in, and removed from, the right frontal lobe. After suture of the dura mater the wound was packed with gauze and dressed. Ten days later the wound, which showed no sign of infection, was reopened and the skull defect was repaired by bone grafts. He was afterwards passed into the Yeomanry as sound and distinguished himself in the South African war.

In contrast with the above case, which illustrates the value of probing, I will describe another in which probing was neglected. The most curious feature of this very curious case is that the results which might well have been expected from this neglect did *not* happen. A boy, riding on a hay-cart and carrying a pitchfork, fell and was carried home unconscious. A large wound on the right side of the scalp and face was cleansed and stitched and subsequently healed by first intention. Two years afterwards, when the boy was about 12 years old, the wound began to reopen. A small abscess formed and healed and then, after a few months, a black object, *protruding about one-eighth of an inch, came through the skin.* At the Newcastle Infirmary he was seen by my house surgeon, Dr. J. W. Heslop, who easily pulled out with his finger and thumb a piece of hay-fork four and a half inches long. It had apparently transfixed the antrum of Highmore and crossed the back of the naso-pharynx to the opposite side of the face. The boy suffered no ill-effects from its removal and walked away to the photographer's.[1]

The most necessary and the most successful operations are, as I have reminded you, performed for the prevention or for the arrest of sepsis. It is the best reason to be urged in favour of an operation that its object is to prevent or to arrest blood poisoning. Take the question which has been discussed *ad nauseam*, when to operate in cases of appendicitis. Operation is demanded when the risk of peritoneal infection is manifest. There is no other definite indication for operation. In cases of "appendicitis" of the type which allows its possessor to attend business regularly and which never interferes with a dance there is grave doubt whether the removal of the appendix is useful or even justifiable. But in cases that commence with acute pain and vomiting and are attended by inability to rest, elevation of temperature, quickening of pulse, tenderness and rigidity of the abdomen, the sooner operation takes place the better. When some doubt has been felt at first, none should remain at the end of 24 hours. Every case in which *all* symptoms and signs are not improved in that time requires operation; it is not enough that there may be betterment in some of them. This has been pointed out by my colleague, Mr. W. G. Richardson.[2] A rule of immediate operation in acute cases would prevent much prolonged illness from abscess and many deaths from general peritonitis, but in the peritoneum, as elsewhere, septic inflammation which has started may be impossible to arrest and when once it has been fully established operation frequently does more harm than good. The same truth may be recognised in other abdominal emergencies. If, for example, a ruptured gastric ulcer is not recognised till peritonitis has been established the patient had probably better be left alone. The chief object of the operation is to prevent or to arrest peritonitis; the repair of the ulcer is only a part of this.

It is no less true of acute cases of intestinal obstruction than of these more generally recognised examples that the most frequent cause of death is blood poisoning. Early in every acute case of intestinal obstruction that I have had the opportunity of observing it was possible to make a diagnosis by noting the cries of the patient in response to the severe spasmodic pain and by discovering increased peristalsis which could be seen, or heard, or felt. In these cases, if they are left alone or treated medically, the prognosis is very bad; not less than 80 per cent. die, while to do radical operations when the small intestines are distended and paralysed by septic contents is usually to court disaster.[3] These cases require prompt decision. I have elsewhere[4] urged the importance of early operation. A few hours of delay may make the difference between recovery and death. Additional experience has confirmed the results I then recorded and proved that the mortality of early operations is comparatively low—not more than 10 per cent. When the intestines are distended my rule has been to do enterostomy through the smallest possible opening with the object of arresting blood poisoning and at a later stage if the patient survives to complete the operation. The danger, however, should have been foreseen and operation done to prevent sepsis at an earlier stage.

The following cases illustrate the danger of delay in operating in cases of kidney stone and gall-stone respectively. A few days ago I operated upon a patient very ill with a large swelling in the left side of the abdomen. He gave a history of 20 years' discomfort and occasional pain in the left loin. There was abundant pus in the urine which was found to come from the left kidney, that from the right being healthy. Roentgen rays showed a definite shadow in the position of his left kidney. I opened the kidney, from which a large quantity of pus escaped, and removed a large branching stone from the calyces. The patient is doing well but will only recover after a serious and prolonged illness with either the complete loss of the left kidney or much damage to it. Roentgen rays would have shown the stone before it caused septic changes in the kidney; its removal then would have been safe and satisfactory.

The same day I operated upon a patient who had gall-stones. There was a history of more than one year's duration that left but little doubt as to the diagnosis of gall-stones. In addition his liver and spleen were large and hard and his kidneys were defective, conditions attributed to prolonged liver sepsis secondary to gall-stones. This view was based upon the fact that at least once a week he had a violent rigor followed by vomiting, a high temperature, delirium, sweating, and great prostration. The diagnosis was confirmed by operation and subsequent post-mortem examination. The liver was in an advanced stage of cirrhosis, the

[1] Journal of the Northumberland and Durham Medical Association, October, 1904, p. 357.

[2] THE LANCET, March 23rd, 1901, p. 851.

[3] In two papers (THE LANCET, June 6th, 1903, p. 1576, and Sept. 17th, 1904, p. 809) Mr. A. E. Barker has shown how some of the most serious cases may recover if the principle that sepsis is the chief cause of death be recognised and acted upon. By large resections of the intestine above the obstruction he removed the septic bowel with its toxic contents and the magnificent results he records should be a revelation to surgeons. These exceptionally brilliant results, however, must not serve as an excuse for the neglect of the earliest possible operation.

[4] THE LANCET, Jan. 31st, 1903, p. 279.

common bile-duct was so much dilated as to resemble the small intestine, there were a large number of stones in the ampulla of Vater and elsewhere in the common duct, the ducts throughout the liver were much dilated, and the gall-bladder was packed with stones and had leaked into an abscess of the liver underlying it which contained many stones. The kidneys were much diseased.

An early operation would have prevented all this mischief. There are far too few operations done for gall-stones, not for those cases which have advanced so far as the one just described and in which the propriety of operation is very questionable indeed, but for cases in which the gall-stones are still confined to the gall-bladder. I have fully expressed my views on this subject in previous papers,[5] and shortly summarised they are: that gall-stones may, like the previously mentioned kidney stone, remain *in situ* for years without causing symptoms; that the symptoms of gall-stones are only found when infection of the gall-bladder (sepsis) is superadded, and that then they become a serious possession and demand operation for their removal. I pointed out more than ten years ago[6] that gall-stones first show their presence by attacks of "spasms" which are likely to be ascribed to stomach troubles; this fact has now been generally recognised. Post-mortem examinations have proved to me that death not infrequently occurs from gall-stones which have escaped recognition. More opportunities for pathological research in the post-mortem room would convince all unbelievers. In the later stages a large percentage of cases die as a consequence of the operation and of their enfeebled condition, while others are not cured because it is impossible to remove stones from all parts of the liver and liver ducts. When the sepsis and stones are limited to the gall-bladder, operations are safe and easy and satisfactory; when stones have escaped into the ducts and have caused liver sepsis, operations are difficult and dangerous and unsatisfactory.[7]

The fact that mouth sepsis, ear sepsis, and throat and nose sepsis are a menace to health and life is not even yet sufficiently recognised, or at least if it is the knowledge is not sufficiently acted upon. To remove all of these conditions should be regarded as a necessity, and if their removal, as it sometimes does, demands a serious operation or operations these must be faced. No patient should be left with a septic focus if by any reasonable possibility it can be removed. It is only because the dangers of such foci are frequently obscured and delayed that their connexion with serious illness has not been more often proved. It is often even now said of persons with discharging ears that the discharge does no harm and has lasted for many years without result. Every surgeon knows the mortal consequences of middle-ear suppuration and does not hesitate at any measure which promises to arrest it; there are other forms of chronic suppuration elsewhere not less deadly.

ARREST OF HÆMORRHAGE.

The surgical rule is, to *see* the bleeding point in order to arrest the flow from it successfully; its importance has not been exaggerated. To comply with it may, as pointed out by Guthrie in his graphic commentaries, require a serious operation, but the advantages to be derived from it were for ever made clear by the relation of his cases. Recent surgical advances have only strengthened his arguments. Under this heading I will mention only a few points that have specially interested me.

Secondary hæmorrhage after injuries or operations is now an uncommon event, for it results from sepsis and this we usually succeed in preventing, and possibly because of the comparative rarity of its occurrence treatment may not always be prompt and decisive. It is often readily arrested by a pad over the bleeding point and a bandage, but recurs a few days later. If it does the bleeding point should be *seen* and the bleeding vessel should be firmly secured. This may involve a considerable operation but that should be no deterrent. The fact has been strongly impressed upon me that hæmorrhage which has more than once recurred is almost certain, sooner or later, to lead to a fatal result unless boldly attacked.

Some years ago it appeared to me probable, arguing from this analogy, that hæmorrhage from a gastric ulcer if it recurred was likely to proceed to a fatal issue without operation, but a larger experience has taught me that this is an exception to the rule. It is, however, probable, in spite of the difficulty of finding the bleeding point, that in cases of recurrent hæmorrhage from the stomach the safest course is to operate.

The symptoms and signs of hæmorrhage into the abdomen demand immediate operation. It would scarcely have seemed necessary to me to mention this but for a recent experience. Twice within the last six months I have been asked to operate for ruptured ectopic gestation on patients dangerously ill and have found the abdomen "full of blood." In one patient the practitioner in attendance had recognised the case so early as to diagnose ectopic gestation before rupture, strong evidence of his capacity and zeal. He followed the rupture of the sac and watched the formation of a localised hæmatocele. Three weeks later, after a sudden seizure, the operation was performed. The second case had a similar history but no diagnosis had been made till the hæmatocele stage. In both the abdomen was "full of blood." Each of the capable gentlemen who reported these cases told me the same story—viz., that they had been guided to the course they had adopted and had been led to defer operation by reading a recent discussion on the treatment of hæmatocele resulting from ectopic gestation. The outcome of this discussion by some of the greatest authorities on the subject was the conclusion that a large percentage of cases can recover without operation. It is, however, impossible for the greatest authorities to make a prognosis as to which cases will recover if left alone, while, on the other hand, surgeons generally recognise that death after operation is the rarest event except in neglected cases. Operation for the prevention and arrest of hæmorrhage should therefore, I consider, follow the diagnosis of ectopic gestation in the present state of our knowledge. As an answer to the question, "When would you operate?" I have given you these general indications, danger of sepsis or the presence of hæmorrhage, as the two most important guides in the decision of the question.

I will now proceed to refer to certain other problems of surgery in which the question, "When to operate," is also of vital importance.

ABDOMINAL WOUNDS.

One of the "lessons of the South African war" was to leave wounds—punctured wounds at least—of the abdomen alone, and the statistics offered in support of this position and the experience of the most competent army surgeons are overwhelmingly in support of it. The same rule applied in civil practice ends in disaster. It should be a rule that *no wound of the abdominal wall must be left without full exploratory operation*. It is surely needless to say that by this I do not mean to say the abdomen should be opened but that the track of the wound should be followed to the end. The relation of a case will emphasise the importance of this better than anything I can say.

At the end of a morning's work I met a man going into the infirmary as I was going out. He had come six miles by train and had walked from the train to the hospital when I saw him. An hour before, whilst at a marriage feast, he put a cartridge into the fire and watched the explosion. Something struck him on the abdomen, he found that he was wounded and bleeding, and came off at once to the hospital. He complained of no pain; his appearance was that of a vigorous man with nothing the matter. In the accident room I found a trifling looking wound above and to the left of the umbilicus, which had bled a little on to his clothing. He requested that this should be dressed to allow him to return home and was with difficulty persuaded to stay. After proper preparation of the abdominal wall and the administration of an anæsthetic the wound was carefully opened up. To our surprise it was found to extend into the abdominal cavity. A rush of blood followed removal of the exploratory finger. The parietal wound was extended upwards and downwards when a quantity of blood, estimated at not less than one and a half pints, was found in the abdominal cavity. The origin of this was a divided artery in the omentum which was pumping freely when caught and tied. Close to this spot, and evidently the cause of the

[5] See Northumberland and Durham Medical Journal for 1895, p. 21; Scottish Medical Journal, February, 1899; and again later in the Annals of Surgery.

[6] See Northumberland and Durham Medical Journal for 1893.

[7] Another argument in favour of more frequent operation has been advanced. It is said (the late Dr. G. R. Slade, THE LANCET, April 22nd, 1905, p. 1069), and statistics lend weight to the statement, that cancer of the gall-bladder is no uncommon occurrence in cases of gall-stone and that cancer follows gall-stone irritation. My own experience, which is limited, of cancer of the gall-bladder does not confirm this; so that I will do no more than mention this view.

laceration, lay the brass end of a cartridge. There was no other damage done and the patient recovered. The whole of the incidents in this case were a revelation, for nothing but a trifling cut was suspected, and without such a rule as I followed death was inevitable.

Certain abdominal injuries demand immediate operation for their successful treatment and no surgical question is more difficult to answer in an individual case than, Is it necessary to open this abdomen? The guides that I have adopted for my own use are based upon the history of the accident and the physical signs. When the history is one of a sudden severe localised blow, such as that resulting from the kick of a horse, severe visceral injury is so probable that only exceptionally should operation be delayed. When after an abdominal injury there is marked shock careful hourly watch should be kept and the administration of opium avoided. Increasing pallor, increasing thirst, and restlessness with increasing rapidity of pulse suggest internal hæmorrhage and the need for prompt action. Continued severe pain, marked local tenderness, localised muscular rigidity, thirst, vomiting, and a quickening pulse suggest a leak in the gastro-intestinal tract and the need of immediate exploratory operation. It is necessary to emphasise the fact that if operation is postponed till septic peritonitis has developed, and this often does not require many hours, the possibilities are that it will then be useless and may be actually hurtful. Radical operation should never be done when the abdomen is much swollen and tense, for if the intestines are not already paretic the operation makes them so. An enterostomy under local anæsthesia is the largest operation that should be performed in these circumstances and this *may* be useful whether the condition is due to mechanical obstruction or to peritonitis.

TUBERCLE AND CANCER.

There is much that is common in the surgery and pathology of tubercle and cancer. Everyone knows the desirability of removal of the focus of disease in both, with the hope of preventing further infection and generalisation, but not all act upon this knowledge. The most common form of tuberculous disease that calls for surgical interference is that which results from infection of the neck glands. So far as my own knowledge goes it would be practically correct to say that enlargement of a neck gland due to chronic inflammation is always the result of tuberculous infection. I think that every such gland is a source of danger and should be removed. When the operation is limited to the excision of a localised glandular enlargement it is attended with little risk and is followed by a trivial mark and the result is likely to be satisfactory. If, on the other hand, extensive glandular infection is found, neither the immediate nor the remote results of operation are likely to be perfect. The same statement may be made, though even more strongly, for cancer. In both the best results are only obtainable when there is local and limited disease. Though emphasising this I believe that a limited amount of disease, how much it is impossible to say, can be rendered innocuous temporarily or permanently by the surrounding healthy tissues. None will deny the truth of this in the case of tubercle and I think it also holds for cancer. No other explanation can be given of the long immunity after operations, which we now regard as partial, done by the older surgeons; and nothing else will account for the delay of local recurrence till many months, or even years, after operations for cancer. Not only for tubercle and cancer is this true. The germs of a great many diseases can, and do, lie inert in the tissues ready to become active under favourable conditions but are kept in check so long as the tissues are healthy. This is an important view, because it will necessarily lead to an increased number of so-called palliative operations, and I believe this to be the correct action in certain cases. Contrary to accepted surgical authority, which teaches that unless it appears to be possible to remove the whole disease operations for cancer do more harm than good, my experience is that in selected cases a satisfactory result may follow partial operation.

In the case of tumours of the stomach and bowel it may be justifiable for mechanical reasons alone to excise non-localised malignant growths. In other regions, too, I would suggest that when a large mass of malignant disease can be safely extirpated it should be done, even though glands or other deposits must be left, if it is in a position where sepsis is avoidable. One patient of mine with rapidly growing malignant disease of both ovaries and small secondary deposits in the peritoneum lived for six years, five and a half of which were vigorous, after an operation for removal of both ovaries, before her death from abdominal cancer. (The diagnosis in this case was verified by microscopical examination and by a second operation.)

How much septic infection superadded to cancer or tubercle increases the risks, multiplies the sufferings, and hastens the downward progress of the patient is not sufficiently appreciated. A single example of this in the case of cancer must suffice. I have seen a fair number of cases of cancer of the cervix uteri in virgins, sufficient to be able to make some definite statements concerning them. The disease in them is not attended by the symptoms usually associated with cancer of the cervix—viz., early hæmorrhage and profuse fœtid discharge. Hæmorrhage occurs late; fœtid discharge, if at all, not till after vaginal examination. The first evidence of cancer in unmarried women (and often in widows) is bladder trouble with pains in the course of one or other of the pelvic nerves. Physical examination shows an inoperable fixed mass of malignant disease in the pelvis. Acting upon this knowledge it is possible, and I have done it, to prolong the life and to remove the symptoms, in cases where a radical operation was impracticable, by arresting sepsis. The sharp spoon and regular antiseptic dressings may be successful for months, and in some rare cases for years, in removing the urgent symptoms of this dreadful disease.

A great deal of interest has been excited by the question of cancer and its recent increase and that it is increasing out of proportion to the increase of the population scarcely admits of doubt. So far as my own experience goes, the increase is largely in cases of cancer of the gastro-intestinal tract and especially in cancer of the colon. A very usual history in these cases is as follows. The patient, generally over 40 years of age, has been latterly troubled with increasing difficulty in getting the bowels to act, more and more purgative medicine has been necessary. Flatulence has been troublesome and flatus has been with difficulty voided per anum. Rumblings in the abdomen have been troublesome and sometimes especially so after taking medicine. They may be sufficiently loud and disturbing to prevent ordinary social or business intercourse. Some loss of flesh is the ordinary rule, but it is not uncommon to see such patients "the picture of health." Physical examination of the abdomen, which is often stout, is likely to reveal nothing. Digital examination per rectum may discover through the wall of the bowel a growth in the lower end of the sigmoid flexure. If it is higher and out of reach of the finger the sigmoidoscope may demonstrate its presence. In women such a growth is heavy and if it occurs in the slack portion of the sigmoid flexure the weight of it makes it fall to the bottom of Douglas's pouch and more than once I have seen it then mistaken for a hard diseased ovary. If examination fails to detect a sigmoid stricture due to the presence of a growth yet if not more than a pint of enema can be retained the fact is in favour of that diagnosis. When in spite of the absence of physical signs the symptoms in a patient over 40 years of age are as I have described them—viz., increasing difficulty in obtaining an evacuation, with painful rumblings, still more if there has been actual obstruction, which may be the first symptom, accompanied by increasing flatulent distension—then exploratory operation should be done without delay. Much as I dislike exploratory operations in general there are good grounds for it here. If a growth be found, as is probable, removal of it may cure the patient or avert by anastomosis the need for a later colotomy, which in many instances is a worse calamity than death itself.

TUBERCLE OF JOINTS.

Tubercle of joints commences, as is well known, in the bone or in the synovial membrane. It is possible now, with the aid of the Roentgen rays, to localise tubercle in the bone before the joint in its proximity is involved. Operation should then be performed with the object of removing the osseous tubercle in time to prevent invasion of the joint. If the synovial membrane is diseased excision of the whole of it precludes the possibility of recovery with a perfect joint. This is so serious a matter that in many cases we must break the rule for tubercle, to excise all infected tissue, and treat tubercle of the joint as an exception. In practical surgery it is necessary to think of tuberculous joints as occurring at three ages—in childhood, in young adult life, and later. In all three it may exist as simple tuberculous infection or it may be complicated by sepsis. It is good teaching to say

of tuberculous joint disease in children up to the age of 12 years that recovery without any operation will surely follow complete and prolonged rest of the diseased joint and attention to the general health. In these circumstances even septic tuberculous joints may entirely recover.

In tuberculous joints occurring in young adults before the age of 25 years recovery may be anticipated from the same measures but interference with the functions of the joint is more likely. If recovery is to result in less of the functions of the joint I believe excision to be the best treatment. By excision I do not mean the operations described in text-books as such, most of which should be abolished, but thorough exposure of the joint and the removal of all diseased tissues and of the cartilage covering the ends of the bones, to allow of cure by bony ankylosis, which in advanced cases is the best result to be expected. The test I employ as to whether this is desirable or not is the amount of movement obtainable under an anæsthetic. If there is fair movement excision is not justified, but if movement in every direction is much limited recovery is quicker and more satisfactory after excision. After the age of 15 years and up to that of 35, if a joint is septic as well as tuberculous excision should be the rule. A striking exception to this is met with, however, in septic tuberculous disease of the wrist, a joint which I never excise. Experience has taught me that by prolonged immobilisation of the joint, treatment of the septic sinuses, and attention to the general health, complete recovery with good movement, even in the most unfavourable-looking cases, may be confidently anticipated. After the age of 35 years the prognosis of tuberculous joint disease is very bad and increasingly so in every advancing decade. Operations should, I think, be more frequently done and earlier than they are, for no other means offers a reasonable prospect of recovery. I have now resected joints for tuberculous infection in several patients over 50 years of age with good immediate and remote results. When tuberculous is complicated by septic infection in elderly patients amputation should not be delayed.

ABSTRACT OF

An Address

ON

TUBERCULOSIS OF THE KIDNEY.

Delivered before the British Gynæcological Society on June 8th, 1905,

BY HOWARD A. KELLY,

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GENTLEMEN,—The nexus between etiology, diagnosis, and treatment is so closely woven that I must touch upon causation, if but briefly, in order to give my little sketch, taken as it were from a surgeon's diary, its due perspective. In the first place, how does the disease reach so recondite an organ? Manifestly there are but three avenues of access: by the blood, by ascending the ureter, and by direct extension from some contiguous organ. Baumgarten of Tübingen (1901) insisted that the tubercle bacilli being no *secretionsparasiten* never advance against the current of secretion but always with it. This dictum, generally speaking, is true, although there are good clinical reasons for believing that in man the disease frequently extends from the epididymis to the bladder, where it may involve and cause a stricture of one or both ureteral orifices. This in turn causes a slight hydro-ureter and then follows the invasion of the upper urinary tract. Without any doubt the infection of the kidney is almost always hæmatogenous. It is important to note that the focus by which the blood becomes infected is often found in the thorax. The primary focus, as has been shown by necropsy, is sometimes a cheesy bronchial gland apparently dormant but for this accident. If for any reason the kidney becomes a *locus minoris resistentiæ* it may then become affected by a tuberculosis when it would otherwise have escaped. This is proved (1) by cases of trauma (see especially Newman) followed by tuberculosis; (2) by the occurrence of tuberculosis with calculi (in a case of Heurotius of Chicago the tuberculous disease developed years after the abstraction of the stones); and (3) by the occurrence of a tuberculosis grafted on to a hydronephrosis, in instances too numerous and too entirely in accord with experimental data to be coincidental.

Tuberculosis once started finds in the kidney so favourable a nidus that the disease becomes, with perhaps the rarest exceptions, progressive. Time spent in trying to cure this disease by climatic or other methods is lost time, for the affection moves *pari passu* or *per saltum*, but in any case it advances. Delay in active treatment means courting the risk of involvement of other organs. A spontaneous cure is so rare an occurrence that Albarran could successfully challenge the French Surgical Society to produce an indubitable instance. Excluding cases of general and miliary tuberculosis, rarely seen by the surgeon, and excluding those forms of the disease in which it is but a late complication of an advanced and manifest tuberculosis elsewhere, usually pulmonary, we have to deal with a disease which is local and unilateral in its onset and which may remain local and unilateral for months and even for years.

Diagnosis.—The clinical history of this almost malignant bacterial infection of so delicate an organ is characterised by the invariable tendency of the disease to proceed step by step until the kidney has been completely destroyed and *pari passu* with its local progress there is a tendency to become disseminated or to invade other vital organs. The clinical studies of the disease have further demonstrated the fact that the disease when it starts in the urinary tract always attacks one kidney first and then the ureter, then the bladder, and that the involvement of the other kidney is fortunately almost always a late secondary affection. From these considerations it at once becomes evident that if the disease can be correctly diagnosed at an early stage, while it is as yet in the one kidney, a cure may be effected by a complete extirpation. The great question of importance in every urinary tuberculosis is as to the accuracy of the diagnosis. In brief, the diagnostician has to consider: (1) Has the patient a tuberculosis of the urinary tract? (2) Is the disease still localised? (3) If the diseased kidney is removed, is the remaining kidney able to do the work?

A satisfactory diagnosis is made when tubercle bacilli are found in the urine at more than one examination and preferably by more than one observer and when these are traced upwards to one kidney and positively excluded from the other. In order to do this the urine as it is collected from the bladder must first be examined; then the separated urines (I use the plural discriminately) must be collected near their sources in the pelves of the kidneys. The diagnosis must include both the character or quality of the infection, as well as the abundance of the bacteria and the question of their constant or intermittent appearance in the urine. In an advanced case with all the signs present the diagnosis is usually quite easy. The patient, often much emaciated and cachectic, has hectic fever, sweats, a rapid pulse, a furred tongue, and anorexia, with a more or less marked low hæmoglobin. There is, as a rule, constant vesical tenesmus, with the passage of urine loaded with pus and sometimes bloody. Palpation in the loin at once reveals, if it is not already manifest to the eye, a more or less manifest tumour on one side. On inspecting the body scars may be found in the neck, in the axilla or in the groin, or there may be a swollen joint or distinct evidences of pulmonary disease. The family history in a large percentage of cases points strongly towards tuberculosis. On making a vaginal examination an enlarged cord-like ureter, sometimes nodular and sometimes so infiltrated and rod-like that it feels as though it would break under firm pressure, is felt through the anterior vaginal wall sweeping round the front of the cervix. Pressure upon this often induces an intense desire to urinate. The opposite fornix is, as a rule, soft and yielding, and here the practised touch readily detects the little normal yielding ureter slipping like a soft wet string between the fingers as it is handled bimanually or is pressed against the pelvic wall. If in a case presenting such earmarks tubercle bacilli are found in a specimen of urine taken from the bladder by a catheter, the diagnosis is assured, and it only remains to determine further the condition of the bladder and of the opposite kidney by a cystoscopic examination, upon which I shall dwell more fully a little later. While the diagnosis of tuberculosis, renal and ureteral, becomes more easy as the disease

advances, with the increasing involvement of the bladder comes the difficulty of finding the opposite orifice and analysing the separated urines and so of differentiating the two sides, and when this is not done the diagnosis must be considered incomplete.

The cases most difficult of diagnosis are the early ones in which the bacilli are often sparse or appear in the urine only at considerable intervals. We are obliged here to depend upon repeated examinations of large quantities of urine (24 hours), allowed to stand, decanted, and then the sediment centrifugalised. Sometimes the examiner only finds the bacillus after many hours of search repeated day after day. In this way one who has had experience and whose suspicions have been aroused by an otherwise inexplicable slight pyuria will sometimes succeed where others have failed. In all obscure cases one of the first steps should be to collect the urinary sediment and to inject it into two guinea-pigs, one into the peritoneal cavities and one under the skin of the groin or axilla. If there is tuberculosis after three weeks the disease will have developed sufficiently to be recognised at the necropsy. The injection of tuberculin is valuable if, in addition to the fever induced, there is marked local reaction in the form of intense pain in the kidney. A practised examiner will in these early cases often detect a little thickening or hardening of a ureter on one side as compared with its fellow, which is significant and yet would ordinarily escape notice. It is in these doubtful cases, too, that the inspection of the ureteral orifices plays such an important part; a tell-tale blush or puffiness or granular condition will often mark the diseased side. The ureteral catheter may then be introduced and the urine from the infected kidney collected without dilution with that of its fellow. In case the diagnosis is not clear the physician can well afford to demand the important added element of time and observation, putting off any thought of operation while he keeps his eye on the patient from week to week or perhaps from month to month.

Any persistent acid pyuria, as Caspar insists, even of a mild grade, which does not yield an efflorescence of organisms with the ordinary culture media should at once be placed under the category of suspected tuberculosis and the urine centrifugalised and a test guinea-pig injected. The following plan is used, adopted from Belgard, cited by Caspar[1]: The urinary sediment which has been centrifugalised and washed with sterile water is injected both intraperitoneally and subcutaneously. The guinea-pigs should at first receive 0·5 cubic centimetre of the old Koch's T.B. If they are tuberculous when this dose is given it is deadly. One then receives an injection into the peritoneal cavity of the washed urinary sediment mixed in about 0·2 cubic centimetre of sterile water. The other receives the same quantity subcutaneously. If the urine contains tubercle bacilli in from three to four weeks following the subcutaneous injection large palpable glands can be felt in the fore or hind feet according to the point inoculated. These glands have already begun to undergo cheesy degeneration and contain tubercle bacilli. The intraperitoneally injected guinea-pigs develop a general miliary tuberculosis with characteristic nodules on the peritoneum, omentum, spleen, and in the lungs and kidneys. Any slight persistent cystitis rebellious to treatment should also always be suspected as a possible tuberculosis and in such a case diagnosis must be looked upon as incomplete until the condition of the kidney has been investigated.

The cystoscopic examination.—I prefer to all other methods in these cases the direct aeroscopic examination of the bladder. If that viscus is badly affected it is most difficult, as well as oftentimes most painful, to clear the bladder and to distend it sufficiently to see all parts clearly, especially the ureteral orifices. It is also still more difficult if there is a tight ureter, as well as hazardous to attempt to catheterise the kidney through a medium of contaminated fluid. By my direct method I can see all parts and I do not frequently mistake a painful bladder which screams when the effort is made to distend it for a contracted bladder, which is a rare bugbear in women. I can also cleanse the ureteral orifices before catheterisation and use hard metal as well as flexible catheters of various sizes in dealing with a rigid ureter. The ulcerated, suppurating, bleeding bladder is a common picture. An injected ureteral orifice, an ulcerated orifice on one side, a pocketed retracted orifice, a deep hole looking like a diverticulum (Fenwick's golf-hole orifice), often tell the tale and are finger-posts to the side diseased. If one orifice looks sound while the other is in the midst of a diseased area the case promises well. In an advanced case when most of the work is being done by one side the orifice shows twice the normal activity and it is easy to catch the urine as it spurts out in the lumen of the speculum and to collect it below and to subject it to a microscopical and bacteriological examination. One may thus avoid catheterising the sound side, although I have yet to see any serious harm done by so doing. The diseased side may resist the entrance of the catheter and when it is once engaged it may bite it so tightly that it feels as if held in a vice. If the urine does not flow after the catheter reaches the kidney it may be started by injecting a little bland fluid. There is no objection to leaving one or both catheters in the ureters for an hour or more. The urine collected in this way may be used for a bacteriological as well as chemical and microscopical examination as it is uncontaminated.

Let me here present in a categorical manner some of the alternatives to be borne in mind in making a diagnosis. 1. Is the organism found the smegma bacillus? How was the urine secured? Was it by voiding or by catherisation? 2. Given the tubercle bacillus in the mixed urines, from which side does it come? Determine by catheterisation, the appearance of the ureteral orifice and the thickened ureter. 3. Is the opposite side entirely free from disease? Bear in mind that a simple pyelitis is not infrequent in the opposite kidney. 4. Bear in mind that the opposite ureter may show marked thickening (perimetritis) and yet the kidney be free from tuberculosis. 5. Note carefully to what extent the bladder is affected as having an important bearing upon the operation and the subsequent treatment. 6. Determine the urea coefficient of the opposite kidney. Is it able to support life? 7. Look carefully for disease elsewhere. Is there a tuberculosis of the genital organs? Is there any pulmonary or glandular tuberculosis? 8. In injecting guinea-pigs remember that tubercle bacilli may pass out of the bladder if your patient has phthisis without injury to the kidney. 9. Remember that the enlarged kidney found in the loin may be the one functionally enlarged and therefore the only sound organ. Twice has such a kidney doing all the work of the body been taken out. There is a great risk of making this mistake. With the information afforded by such a complete analysis one is then ready to proceed to the operation with confidence, or at least with full knowledge of the risks incurred.

Treatment.—This consists in the extirpation of the disease in every case which will permit it. The supreme aim of surgery is conservatism but in spite of some notable exceptions it has not done well here. The difficulty is that almost all tuberculous kidneys contain scattered foci infection which cannot be seen before the complete removal of the organ from the body. I would only be content to exsect the diseased area in rare cases in which the disease was evidently limited to one pole, as demonstrated by splitting the organ from end to end and down into the pelvis as it lay outside the body before ligation of the vessels and detachment. Now having spoken so strongly for radicalism I must remind you that cases do occur in which conservatism has proved brilliantly successful. In its proper sphere, as a preliminary to a radical operation, nephrotomy is a precious life-saving measure. I have had several patients apparently in the last stages of emaciation and hectic fever to whom a nephrotomy readily done in from three to five minutes without shock under gas gave immediate relief to the distressing symptoms and enabled them to pick up and to stand a radical operation at a later date. It is important in a nephrotomy to open up all the abscesses in both poles of the kidney.

The radical operations may be conveniently divided into five classes: (1) in the early stages of the disease; (2) in advanced renal disease; (3) with involvement of the ureter; (4) with involvement of both ureter and bladder; and (5) a group of anomalous cases in which the tuberculosis complicates a hydronephrosis or a calculous kidney. Not to enter into unnecessary details before an audience of surgeons let me state that I find the most satisfactory avenue for the exposure of the kidney in the absence of malignant disease to be the posterior lumbar triangle formed by the tendinous aponeuroses of the oblique muscles and lying just below the last rib. The boundaries of the triangle are the oblique muscles, the quadratus lumborum, and the eleventh or twelfth ribs. Above the triangle lies the covering of the latissimus dorsi and ventrally lies the retro-peritoneal fat.

[1] American Journal of Urology, 1904, I., 50.

An oblique incision about three inches long, extending from the yielding spot in the angle between the quadratus, exposes the latissimus which can be lifted like a lid or separated in the direction of its fibres or simply divided transversely. The whitish area of the triangle apex down is then usually seen at once. A pair of closed forceps is pushed through and withdrawn when the golden-yellow fat pops out. The opening is then enlarged by blunt force, pulling the muscles away from the quadratus. In this way as a rule an opening can be made large enough to remove the kidney and give perfect command of the entire field without the ligation of a single vessel. An enlargement is easily effected by separating the external oblique muscle fibres or by dividing them, making a sort of frying-pan incision. Care must be taken throughout not to injure either the last dorsal nerve or the first lumbar lying under the shelter of the quadratus but varying a little in its position. It is pleasant here to acknowledge the debt we owe to Lennander for the emphasis he has placed upon the necessity of sparing the nerve trunks in the various lateral incisions in the abdominal parietes, so as to avoid such disagreeable sequelæ as anæsthetic and paræsthetic areas and muscular atrophy. In advanced disease, when the kidney is much enlarged, it is not worth while to waste time trying to remove it intact; it is best to empty it at once, reducing its size to a minimum, and then, after irrigating thoroughly, to proceed to the extraction. The greatest difficulties are often encountered at the upper pole and on the right side in the intimate adhesion to the vena cava and the duodenum. Extreme care is necessary in effecting a detachment at these points, proceeding slowly and under direct inspection. A duodenal fistula is a serious and often fatal accident.

In the extirpation of the kidney in old suppurative cases I would urge the more extensive use of the intracapsular enucleation (Ollier, 1883). Sometimes an operation which has bid fair to be hazardous in the extreme is turned into the simplest possible procedure by thrusting the fingers through the dorsum of the kidney and then breaking through the kidney substance on all sides from within out as far as the tough capsule. By following this in every direction with one or two fingers the kidney is soon separated on all sides down to the vessels at the hilum which are then tied. This is practically the only possible method of enucleation in these instances of sclerosis of the surrounding adipose tissue.

Let us now look at those cases in which the disease has extended from the kidney down into the ureter. About a year ago Dr. Hume, my associate, reported[2] 13 cases of nephro-ureterectomy, all of which recovered. In four of these the ureter was felt like a whip-cord through the vagina, but on removal showed only a chronic ureteritis. I therefore recommend caution in adding the ureteral extirpation to that of the kidney. The cases best adapted to the more radical operation are those with a greatly enlarged, often strictured ureter.

Nephro-uretero-cystectomy.—One of the most serious local extensions of the disease has from the first been deemed an involvement of the vesical walls and a number of surgeons have considered cases of this character as beyond the pale of radical relief. My own work in some desperate cases has taught me that with careful surgery almost no case is beyond radical relief so long as the disease remains confined to the urinary tract of one side and the bladder; and to this may be added a non-tuberculous pyelitis of the opposite side. Two of my cases looked exceedingly hopeless and had been given up to die; both were emaciated by months of night vigils and constant intense suffering with tenesmus, and one did little else than lie moaning like a distressed animal, screaming if she was touched on the vagina and soaked in her offensive involuntary discharges. The bladder was contracted, ulcerated, bleeding, and uniformly of a deep angry red colour characteristic of an active universal cystitis. The first step was to relieve the pain and that was done by making a large vesico-vaginal fistula. Next the tuberculous kidney with its thickened ureter was taken out, then in one case a large part of the bladder was excised, and subsequently another piece was taken out, both times suprapubically, between one-third and half in all. The fistula was closed, the bladder was irrigated and distended, and in the latter case the remaining kidney was irrigated. Both recovered over a year ago and are now well women managing their respective households. I cannot insist too strongly on the value of the prolonged bath at an even temperature of 100° F. for hours or all day, as devised by Dr. Hume for these cases, especially if the vagina is patulous.

The steps, then, are these:—(1) Drain a bad bladder thoroughly; (2) then remove kidney and ureter; (3) use the bath when possible; (4) close the fistula; (5) treat any remaining small patches of the disease with nitrate of silver applied through the open-air speculum; (6) use distension and irrigation treatments; and (7) excise any rebellious areas of disease. As a matter of fact, the small patches of cystitis and the little areas of disease around the ureteral orifice are rarely tuberculous, and this is the reason they clear up so readily without further treatment after a nephrectomy.

[2] American Medicine, April 30th, 1904.

40 CASES OF URETERAL CALCULUS IN WHICH THE ROENTGEN DIAGNOSIS WAS CONFIRMED BY THE RECOVERY OF THE CALCULUS.[1]

BY CHARLES LESTER LEONARD, M.A., M.D.,
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A CONSIDERATION of the cases of ureteral calculus in which a diagnosis has been made by the Roentgen method and confirmed by the operative removal of the calculi or their passage and recovery will help to an appreciation of what this method has added to the accuracy of surgical diagnosis and how great its influence has been in modifying treatment and increasing knowledge. There is no greater evidence of its accuracy than the fact that it has shown ureteral calculi to be much more frequent than was previously supposed; in fact, they have been shown to be more frequent than renal stones in the series of 330 cases examined. Their ratio has been 33 to 66, including cases not operated upon or yet confirmed by the passage of the calculus, and 29 to 40 in cases confirmed by operation or the passage of the ureteral calculi. Besides establishing the greater frequency of ureteral stone, the knowledge gained by this method has led to a recognition and closer differentiation between the symptoms of renal and ureteral colic.

The recognition of the fact that ureteral stones are more frequent than renal has also had a direct effect upon the indications for operation. With the additional accuracy afforded by this method of diagnosis it has been possible to institute a course of expectant treatment that a precise knowledge of the conditions present rendered justifiable and rational. The value and wisdom of such a course of treatment in selected cases of ureteral lithiasis has been demonstrated by the passage and recovery of calculi in 26 cases without operation. This method cannot produce the best results when used alone but in combination with the other recognised means of diagnosis it adds such accuracy and precision that no diagnosis of surgical conditions of the kidney can be complete without the knowledge it affords. It often renders operation unnecessary and always increases the efficiency of operative intervention by determining the exact amount of interference needed and limiting the field of operation to the exact seat of the calculous lesion. This is absolutely true only in uncomplicated calculus conditions, and yet where no calculus is present the knowledge it affords often renders safe treatment that would otherwise have been hazardous. The early period at which this method of diagnosis can determine the presence or absence of lithiasis is of the utmost importance, for when the symptoms have become sufficiently obvious to make it possible to recognise the condition pathological changes are often far enough advanced seriously to affect the functional efficiency of the kidney.

A more careful study of the 40 cases of ureteral stone in which the Roentgen diagnosis has been confirmed by the operative removal or the subsequent passage of the calculi will give a wider conception of the value which this method of diagnosis has in surgery of the kidney. The cases of negative diagnosis and of renal calculus will be considered only in so far as a comparison may render more obvious the advantages of this method of diagnosis.

The differential diagnosis between calculous ureteritis and

[1] A paper read before the Medical Section of the Röntgen Society, London, on May 4th, 1905.

other extra- and intra-ureteral conditions was one of the most difficult fields of surgical diagnosis. A differentiation between renal and ureteral colic and lithiasis was practically impossible and yet that division was of vital importance in deciding between expectant and operative treatment. The possibility of determining precisely the size and position of all calculi, or of excluding them, altered the indications for operation in ureteral lithiasis. The detection of a calculus in the kidney is an indication for immediate operation. The indications in ureteral conditions vary with the size and position of the calculi and the accompanying symptoms. A study of the symptomatology of the cases of ureteral lithiasis will help to determine the differential symptoms from renal lithiasis and the indications for operative or expectant treatment in cases of ureteral stone.

The confusion in symptomatology often met in cases of suspected urinary lithiasis renders an accurate differentiation practically impossible. There may even be such a lack of symptoms that a diagnosis of calculus is not justified and yet a calculus will be found to be present by the Roentgen method. Any differentiation between renal and ureteral lithiasis by symptomatology cannot be applied to every case nor can it be considered possible except in typical cases. In certain cases, however, a symptom or group of symptoms will render probable the presence of a ureteral rather than a renal stone. The study of the symptomatology will give a clearer idea of those symptoms that point to a position of ureteral stone and demand the employment of the Roentgen method to establish the presence of, or exclude all, calculi. The earlier the cases come for diagnosis the more efficient and valuable will be the treatment and this end will be furthered by a better understanding of the suspicious symptoms. This end can be best attained by discussing the atypical symptomatology and attention can be confined to those particularly indicative symptoms that materially assist in differentiating between renal and ureteral involvement, and also those which when taken in conjunction with the Roentgen diagnosis of a ureteral calculus indicate the probability of its passage, and that expectant treatment should be instituted rather than immediate operation.

The anatomical conditions and physical forces that come in play when a calculus becomes impacted in the ureter and act to propel it downward are responsible for much of the variations in symptomatology. The impaction of a calculus causes a stoppage of the urinary flow and thus a gradual distension of the pelvis of the kidney and ureter. The pelvis and ureter are capable of contracting upon their fluid contents and thus a hydrostatic pressure is brought to bear upon the calculus. The normal peristaltic wave has probably very little to do with the expulsion of a calculus. The *vis a tergo* is purely hydrostatic, resulting from the spasmodic contraction of the viscus. This force has a two-fold action: it tends to distend the ureter at the seat of impaction of the calculus and to push the calculus along the distended ureter. The result in the progress of the calculus is largely dependent upon the size and character of the stone, a factor that also influences materially the symptomatology. The urine may distend the ureter and escape around the calculus without pushing it before it or it may gradually work the calculus down the ureter. The most frequent seats of impaction have been the uretero-iliac junction, the juxta-vesical portion of the ureter, and the narrow portion an inch or more below the lower pole of the kidney. The frequency of impaction has been in the order named, while all multiple ureteral calculi have been found in the juxta-vesical portion of the ureter.

The impaction of calculi and much of the variation in symptoms are due to their shape, size, composition, and the presence or absence of infection. So long as infection is absent and the calculus does not produce obstructive symptoms it may remain for a long time without producing suggestive symptoms. In the kidney the larger the calculus the less liable is it to produce severe symptoms. In the ureter very small smooth calculi may pass almost unnoted and yet in one case (No. 226) a smooth oval calculus composed of earthy phosphates and uric acid and weighing only 0·096 gramme had produced two previous attacks and a final attack that lasted 11 days before the calculus was passed. The rougher the calculi the longer and more painful will be the attacks and the more chance there will be of finding blood in the urine.

The larger calculi which enter the ureter are liable to produce repeated attacks of ureteral colic with an almost constant dull ache in the lumbar region, due to the intermittent hydronephrosis. On the other hand, the simplest and gravest conditions may be present where there are aseptic calculi of no matter what form. The very absence of symptoms, which is the condition generally accompanying them, is the gravest element of danger. Undetected or unsuspected calculi are a grave menace—a menace which is removed when their exact position and size are known. The importance of this method, which accurately determines their presence or absence, is self-evident.

In studying the characteristic symptoms which differentiate ureteral from renal lithiasis it must be borne in mind that often any accurate differentiation is impossible and that in many cases symptoms only suggest the possibility of a calculus with no way of determining its presence, even much less of accurately locating it. There are, however, certain differences in the nature and character of the symptoms present in ureteral and renal colic that should suggest the presence of the calculus in one or the other portion of the urinary tract. The pain experienced may in general seem identical and yet when the exact location of the calculus has been determined by the Roentgen method marked characteristics can often be noted. A dull ache in the lumbar region is common to both; it may be constant as the result of a large quiescent renal calculus, either sterile or in a pyonephrotic kidney. In ureteral lithiasis the dull ache is due to the obstructed flow of urine and the gradual distension of the kidney and ureter. The renal condition seldom presents colic attacks unless clots of blood from a loosening of the calculus or masses of pus produce obstructive symptoms. The pain even then is not so lancinating in character during the sharp attack. The renal stone that produces a constant ache seldom produces obstructive symptoms of itself. The ureteral calculus causes an increasing ache as the obstruction becomes complete, which is due to the increasing hydronephrosis and forms a prodromal stage to the acute attack. The attack is sharper. The fulminating point of the colic pain is low down in the line of the ureter. The pain is more lancinating and is generally accompanied by nausea and vomiting. The lumbar ache persists after the attack, unless the calculus has been expelled, and generally subsides gradually. This prodromal stage and gradual subsidence of the lumbar pain differentiate ureteral colic from renal colic, due to the temporary impaction of a small or medium sized calculus in the infundibulum of the ureter, and the sharp attack of renal colic it produces and also from the dull constant ache without exacerbations of the large quiescent renal calculus.

The fulmination point of the colic attacks and the direction of radiation are also often very characteristic. The acute pain of renal colic may go in all directions, around the body and to the stomach, as well as down the line of the ureter to the testicle and scrotum. The classical descriptions of renal colic grouped together all the symptoms, confusing and confounding them. The accurate localisation of the calculi during the attack has rendered the differentiation possible. The pain of ureteral colic radiates in the paroxysms up to the kidney as well as down through the ramifications of the genito-crural nerve. The pain is located in the testicle, the scrotum, the labium major, along the urethra, in the line of the groin, the inner side of the thigh, the knee, or even the foot; generally in more than one of these points, sometimes in nearly all. It also has an upward direction and in addition to the dull lumbar ache there are acute pains during the colic attack which ascend the ureter and involve the kidney or pass to the stomach causing nausea and vomiting. A reflex symptom in addition to the tendency to nausea and vomiting, often present in ureteral stone above the iliac artery, is due to irritation of the psoas muscle. Its relaxation is often sought as a method of relief, flexing the thigh upon the pelvis and this in turn upon the spine. The relief afforded can be readily explained by the straightening produced in the ureter at its iliac crossing, and is one of Nature's methods of facilitating the passage of the calculus.

The symptoms change for calculus below the iliac artery and will be considered further on. In ureteral stone at or above this point palpation often affords valuable confirmatory evidence. The most common point at which a ureteral calculus can be palpated is at the uretero-iliac junction, where the ureter crosses the common iliac artery and dips down into the pelvis. This is a point of narrowing and bending of the ureter which often causes impaction. In most patients this point can be readily detected and in all where the bifurcation of the iliacs from the abdominal aorta can be palpated. After determining this point the finger is carried to the right or

left and downward along the line of the common iliac artery for an inch or one and a half inches. The pulsation in the common iliac can generally be felt. Along this line an acutely tender point will be encountered, "like touching a sore tooth," as the patient expresses it, and often the hardness of the calculus can be perceived. Sometimes it is possible to follow up the distended and tender ureter from this point. The tenderness in these cases can, however, be readily confused with that of a ureteritis of tuberculous origin or one which accompanies a condition of surgical kidney. Palpation may also detect the hydro-ureter and hydronephrosis. The marked and fluctuating intermittent hydronephrosis resulting from calculous obstruction of the ureter has frequently been mistaken for a floating or moveable kidney, the kidney in its distended condition being mistaken for a displaced organ.

Pain and tenderness are, however, very misleading symptoms in the differential diagnosis of extra-ureteral conditions from ureteral lithiasis. Pain localised at the ureteroiliac junction and the tenderness along the ureter have been mistaken for appendicitic and ovarian disease. In two of the cases the patient has been previously operated upon for appendicitis while one had also had the kidney stitched in place. In both the ureteral calculi were subsequently recovered. My friend, Dr. Boggs of Pittsburgh, has had a similar experience, finding ureteral calculi in two cases which had previously been operated upon for appendicitis without relief from their symptoms. The possibility of this confusion in symptomatology was first mentioned by me in 1902 in a paper before the American Medical Association.

After the calculus passes the iliac artery the next point of possible impaction is at the bend near the iliac spine at the commencement of the juxta-vesical portion of the ureter. Calculi, however, more generally become impacted at the vesical end of the ureter where it enters the wall of the bladder. The symptomatology of calculus in this portion of the ureter differs decidedly from that where the calculus is higher up. True, there are lumbar ache, a sense of fulness, and possibly a palpable renal tumour but the majority of the symptoms are referred to the bladder and simulate vesical stone. There is pain referred to the glans penis or the meatus in the female and to the urethra in both. The pain may follow urination or may be entirely distinct from it and so severe in the urethra as to amount to veritable strangury. There is generally less involvement of other branches of the genito-crural nerve. Though pain is often complained of in the groin, and pain referred to the other side of the abdomen, it was felt in only one case in which the calculus was situated in the juxta-vesical portion of the ureter, while the pain was chiefly felt on the opposite side. Small calculi impacted in this portion of the ureter have given rise to the most severe symptoms. In one case there were complete obstruction and a pyo-uretero-nephrosis with high fever that demanded immediate operation. The obstruction was caused by three small calculi no larger than grape seeds. In another the bladder had been explored by cystotomy for encysted stone. In two or three other female patients persistent local treatment for the cystitis had been carried on for some time without any alleviation of the symptoms. A calculus in the juxta-vesical portion of the ureter can often be palpated either per vaginam or through the rectum; sometimes, however, minute calculi cannot be detected in this manner, especially if they lie in the para-sacral or the first part of the juxta-vesical ureter.

The differential diagnosis of renal from ureteral lithiasis is only valuable in formulating the indications for treatment. The study of the symptomatology of those conditions which simulate ureteral or renal stone that are intra-ureteral or renal show the importance of the Roentgen method of diagnosis, while an attempt to differentiate intra- from extra-ureteral conditions shows how impossible in many cases is any accuracy in diagnosis. In fact, exploratory operation as a method of diagnosis is often necessary, where an accurate diagnosis cannot be reached by other methods after calculus has been excluded and the symptoms indicate the presence of a grave condition that threatens the functional efficiency of the kidney. The greatest value of the Roentgen method of diagnosis is found in its combination with other known methods and yet its importance as a diagnostic method is very evident when the impossibility of differentiating urinary lithiasis from other conditions is realised. The elimination of calculous conditions by this method is essential to the rational treatment of all cases of ureteral and renal disease. This may be said of even the so-called purely medical diseases of the kidney. Ureteral and renal calculi have frequently produced an irritation of the kidney that has been expressed in an albuminuria without other symptoms which has been mistaken for chronic interstitial nephritis or for Bright's disease.

In difficult cases of suspected ureteral lithiasis urinalyses are frequently of little value and are generally negative. The presence of red blood cells immediately after a severe attack of colic is of the utmost importance and yet they may be entirely wanting. A small amount of albumin is almost constantly present but is of little value in differential diagnosis. The crystalline deposits in the urine are valuable, because they aid in determining the quality of Roentgen discharge that may be safely employed in the search for calculi; where there are no crystals present the preponderant salt may be determined by refrigerating the urine. The crystals thus precipitated can be recognised under the microscope. Their value is, however, only relative.

The determination of the amount of urea excreted forms the safest guide in expectant treatment, as it determines the functional capacity of the kidney and shows whether it is sustaining injury from the presence of the calculus. In the difficult cases of diagnosis urinalysis is often of very little value as the urine may be perfectly normal and yet very grave conditions may be present. It is not, therefore, a method upon which much dependence can be placed in cases where a negative finding is made. An estimate of the value of any method of diagnosis in suspected calculous conditions can only be made by comparing it with the results obtained by other methods, both in detecting and excluding calculi from the urinary tract.

Probably the most striking proof of the accuracy of the Roentgen method is that it has shown that ureteral colic and calculi are more frequent than renal colic and that it has led to a differentiation between the symptoms of these two conditions. The increased frequency of ureteral stones is not due to their more frequent occurrence but to their recognition by a more accurate method of diagnosis. A fact recently made known to me by several operators, and one which is true in my series of cases, is that as the technique becomes more perfect the proportion of ureteral calculi detected increases. In considering the accuracy of this method the personal equation of the individual operator must always be taken into account. Although this diagnosis depends for its accuracy upon its mechanical method of obtaining results, those results will not be accurate unless it is employed properly. The skill and experience of the individual operator with this method must therefore be taken into consideration in every case and his percentage of error estimated. Not only must the technique be capable of producing a negative upon which both the positive and negative or exclusion diagnosis can be based, but the operator must also be able to translate the diagnosis from the negative which he recognises to be satisfactory. This is often the most difficult part that depends for its value upon the clinical experience of the operator. The introduction of this personal element introduces the only source of error in a method which otherwise would be mechanically accurate. Infallibility has never been claimed for this method, but clinical experience shows that it possesses greater accuracy than any other method when correctly employed.

In the series of cases upon which these conclusions are based there are many cases which prove its greater accuracy. Competent surgeons have failed to find encysted calculi, calculi imbedded in the substance of the kidney and one or more of multiple calculi have been left behind, while calculi in both kidneys or in kidney and ureter have led to incomplete and later second operations. In four cases calculi left behind resulted in urinary fistulæ that healed after the calculus was removed.

The possibility of these errors has been admitted by the best operators and the most eminent writers. Mr. Henry Morris said: "Even when the kidney is exposed to the eye and has been palpated all over, and exploratory punctures have been made systematically in every direction into its substance, a calculus may yet escape detection." It can be added with equal truth, as the experience of other surgeons, that the kidney may be split open and yet a calculus will escape the exploring finger. This has been proved by my own experience in this series of cases where calculi in both the kidney and ureter have been found after operations by skilful surgeons and in one case where a calculus detected by the Roentgen method was not found by the first operator but was subsequently removed by another. Literature has

also many examples that show how common incomplete operation has been and how frequently small ureteral calculi have been passed after an unsuccessful nephro-lithotomy.

The accuracy which has been demonstrated for this method by clinical experience has led me to hold that the negative diagnosis where proper technique and skill have been employed and a satisfactory plate has been obtained is of such accuracy that surgical interference with the purpose of detecting calculi is unnecessary and not justified. That is, in an exploratory operation upon the kidney, unless some macroscopic pathologic lesion is found, an incision into the kidney to seach for calculi is not justified. This cannot be held to be true of the fluoroscopic examination of the kidney during an operation or at any time. The delicacy in detail, essential in a radiographic negative before an exclusion diagnosis can be made, shows how impossible are the claims of accuracy by the fluoroscopic method.

This claim of accuracy for the negative or exclusion diagnosis is borne out by the statistics of the cases examined by myself. There have been but four cases in which calculi have been found on operation or passed in the series of 330 cases examined since I claimed equal accuracy for the negative and positive diagnosis, and the negative diagnosis has been confirmed by operation 47 times. There have been six other cases in which the surgeon failed to find a small calculus detected by the Roentgen ray or in which only a mass of cretaceous substance was found in the pelvis of the kidney. It is probable that half the errors were due to defective operating, a delay after the examination sufficient for the calculus to pass, or its escape during the operation.

The value of an accurate negative diagnosis is very great; it not only renders unnecessary exploratory operation for stone, but often all operations can be avoided and the patient treated by purely medical methods. There are many cases of oxaluria and phosphaturia in which the symptoms so strongly suggest calculous conditions as to render operation necessary unless an exclusion diagnosis can be made. On the other hand, the gravest conditions of calculous anuria, with scarcely no symptoms, are so serious that their treatment by medical measures would surely result in death. The differentiation of extra-ureteral conditions from ureteral lithiasis is often very difficult and yet the exclusion of calculi renders their recognition and treatment possible. But including all these cases as due solely to errors in Roentgen diagnosis the total amount of error in both the positive and negative diagnosis is less than 3 per cent. of the 330 cases examined. This is a percentage of error that compares very favourably with any other method, or all other methods of diagnosis, including exploratory nephrotomy.

In comparing the dangers of other methods this method is shown to be far preferable. The only danger lies in a possible chance of x ray burn which cannot be absolutely excluded but is of rare occurrence. The method is much less dangerous and more accurate than segregation of the urine, ureteral catheterisation, cystoscopic examination, or even sounding of the bladder. While all these methods are valuable and should be used in conjunction with the Roentgen method, there is an element of danger due to infection that makes that routine employment in aseptic cases a matter of grave doubt, while where infection of the bladder is present, ureteral catheterisation, either through the cystoscope or retrograde catheterisation during nephrolithotomies, is unjustifiable, as infection will probably be carried to the kidney. The danger is equally great no matter which way the catheter is passed, as its withdrawal from the bladder to the kidney in retrograde catheterisation can cause infection.

Upon what, then, shall operative intervention be based in calculous conditions and how shall a differentiation be made between cases in which operation is demanded and those in which expectant treatment is indicated? In renal lithiasis the detection of a calculus by the Roentgen method is of itself an indication for immediate operation. This is true even where ureteral calculi are also present. The indications for treatment in cases of ureteral lithiasis have been greatly modified by the greater accuracy and exact knowledge afforded by the Roentgen method of diagnosis. In a paper before the surgical section of the American Medical Association in June, 1901, I pointed out the effect which this method of diagnosis had had upon the indications for operation. I showed that it furnished the data upon which a rational and safe course of expectant treatment could be established and that with the knowledge it afforded it was safe to leave to nature that which it has been recognised can be accomplished without danger to the patient. Such a course of treatment must necessarily be carried out under strict supervision. The result of the employment of that method has been the passage of calculi in 26 cases without operation—a result which attests the value of this method of treatment.

The tolerance by the ureter of a calculus in it, when there is no infection present, has been previously demonstrated by many cases reported in literature in which patients have passed long series of calculi. There are two such cases in those recorded by myself. The detection of a calculus by the Roentgen method does not therefore constitute an indication for its immediate removal, it rather establishes an indication for non-operative treatment if its size indicates the possibility of its passing and there are no complications that point to immediate removal.

The conditions that indicate immediate operation in the presence of a ureteral calculus are the detection of a renal calculus in one or other kidney, the large size of the calculus making it improbable that it should pass, the presence of infection, pyrexia, &c., showing that the vitality of the kidney is endangered and the absence of urinary flow from the affected ureter, as suggested by a sudden decrease in the amount of urine passed or in the excreted urea and demonstrated by the absence of flow as observed by the cystoscope. Where the calculus is small and even where there are multiple calculi if there is a history of repeated attacks of colic marking the progress of the calculus down the ureter there is great probability that the calculus can be passed by natural channels.

The mortality from ureter-lithotomy is high, especially for calculi situated in the para-sacral or juxta-vesicle portions of the ureter, unless they can be reached through the bladder or the vagina. With a series of 26 cases of ureteral calculi that have been passed under the expectant plan of treatment it is reasonable to advise this course of treatment when safeguarded by the exact knowledge of the size, position, and number of the calculi, making immediate and accurate intervention possible if urgent symptoms demand it.

While the presence of an undetected calculus may be a grave danger and a menace to the integrity of the kidney, so soon as its exact size and location are known that menace ceases unless there are symptoms present that indicate a progressive impairment to the function of the kidney. Comparatively few of the migrating calculi give rise to anuria or the greater proportion of patients suffering from ureteral stone would die. The relative infrequency of symptoms that demand operation for ureteral stone is indicated by the fact that in only 15 cases was operation employed, and even then possibly the calculi would have passed, while 26 patients passed the calculi without operation. Many cases operated upon were complicated by multiple or renal calculi that demanded immediate operation.

The symptoms that suggest the employment of expectant treatment are a constant dull ache in the lumbar region with a history of repeated acute attacks of ureteral colic that have been referred to the location of the calculus. There may or may not be blood in the urine as an evidence of the progression of the calculus, but pus and the indications of ureteral and renal infection should be absent. When these symptoms, and possibly a palpable hydronephrosis, are found in conjunction with a Roentgen diagnosis that shows a calculus of moderate size in the ureter; they may be considered as sufficient indications of a vitality and force in the kidney that will finally expel the calculus. Each attack of ureteral colic is an indication of Nature's efforts in expelling the calculus and generally means a distinct progression. The attacks should be welcomed as indicating a near approach to expulsion. The patient should not be put to bed or advised to keep particularly quiet unless there are dangerous symptoms that demand immediate operation. Large quantities of any naturally alkaline mineral water should be taken. Their efficiency is probably due to their volume and diuretic action rather than to any solvent tendency, though they tend to prevent concentration of the urine and possible increase in the size of the calculus. Glycerine in teaspoonful doses has been recommended and has been employed in several of the cases that have passed calculi. Its direct influence upon the passage of the stone cannot be, however, determined. Urotropine has had remarkable efficacy in rendering or keeping the urine sterile. No direct benefit has been seen from the use of piperazine, although it may have decreased the formation of uric acid; the evidence has been purely negative. In phosphaturia and cases where

phosphatic calculi have been passed the employment of buttermilk and formulæ containing lactic acid with pepsin have been found of great value in preventing the formation of other calculi. In left-sided ureteral calculus an enema of hot water in the bowel will often relieve the patient of pain and hasten the progress of the culculus down the ureter. The calculus may also be hastened in its progression by massage when it can be reached at the ureteo-iliac junction or through the vagina or rectum. In one case the calculus was undoubtedly crushed by this procedure. After any such manipulation and before all operation, especially those that have been delayed after the Roentgen examination, the Roentgen examination should be repeated and the bladder washed out with a Bigelow's evacuator as after litholopaxy. In one of the cases reported the calculus passed into the bladder between the first and second Roentgen examinations. In those other cases that have been considered errors in the positive diagnosis there were colic attacks between the examination and the operation. The search of the bladder was not made in any of these cases with an evacuator and it is highly probable that the calculus passed unnoticed during the colic attack.

The effect of the greater accuracy in the diagnosis of calculous conditions by this method upon surgical procedures has been to render a complete operation with the minimum of surgical interference impossible without the comprehensive diagnosis which it affords. It has also decreased the necessity for operation by furnishing valuable indications for a conservative expectant line of treatment that is fully justified by results already obtained. In addition to rendering the operation complete this method has localised the operative intervention, making it unnecessary to explore the other kidney or the ureter when only the kidney is the seat of calculous disease. The value peculiar to this method of diagnosis and the accuracy claimed for it can only be secured by a technique capable of making an accurate negative as well as positive diagnosis. Such technique cannot be obtained without careful study and must be fortified by a clinical experience that renders the operator capable of translating the diagnosis accurately from a radiographic plate in which he recognises the features essential to the establishment of the diagnosis. Infallibility is not claimed for this method but a greater amount of accuracy has been established than is possible by other methods. Even such accuracy cannot be expected unless the operator has acquired a technique and clinical experience that warrant a belief in his accuracy. The great difficulty is that the surgeon expects equal accuracy from every operator and condemns the method because his clinical experience has brought him in contact with an operator who is unfitted to employ it accurately.

I insist upon the following features of my technique as producing accuracy and I believe that a disregard of them by other operators accounts in a measure for their lower percentage of calculi found in the total of cases examined and the lower percentage of ureteral calculi. Conversely the high percentage of ureteral calculi is an indication of the accuracy of the method employed, although it may be in a measure accounted for by the greater difficulty in reaching a diagnosis by ordinary methods. The first essential of technique is the employment of a constant quality of Roentgen ray, the penetrating power of which is so low that it will not penetrate the least dense calculi. The negative diagnosis was established upon the axiom that where shadows of tissues less dense than the least dense calculus are shown no calculus should escape detection.

The recognition of a negative as possessing these qualities and its proper translation are essentials of technique. The quality of ray employed has been given off by a tube the relative resistance of which as measured by a parallel spark in air was from one and a half to two inches. The tube must be capable of maintaining itself during the entire exposure at the same vacuum. Many tubes and tubes of higher vacuum often vary in penetrating power, so that the light at one time during the exposure penetrates the smaller calculi. A technique based upon short exposures and a higher vacuum is open to this defect. The majority of tubes vary in vacua decidedly during an exposure, as can be demonstrated by photo chemic tests, or seen in the reading of the milliampere-meter in series with the tube in the secondary circuit, or as noted in the parallel spark gap. The employment of a compression diaphragm is unnecessary unless tubes are energised by coils working on high voltage circuits in which a high amount of inverse discharge results from an improperly corrected self-induction. I have always employed 20 volts or less in my apparatus and I believe that the absence of diffuse radiations results from the employment of higher voltages.

THE ADVANTAGES OF A PURIN-FREE DIET.

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THE ordinary articles of diet in which purin bodies are present to an appreciable extent have been so fully dealt with by Haig and Walker Hall among others in recent years that it is not necessary to say more than that the most important are included in meat, fish, tea, coffee, mushrooms, asparagus, and the pulses. There are few types of chronic disease that are not benefited by a diet from which such substances are excluded. In some instances no other treatment is so efficacious and there are now on record numerous cases in which no improvement took place during years of treatment on conventional lines, while the adoption of the diet under consideration has in a period varying from six months to two years effected a permanent cure. A brief reference to one or two will best explain the possible result.

CASE 1.—The patient, a young professional man, suffered from various gouty and neurasthenic disorders such as megrim and jaundice, but particularly from an almost constant and insistent diarrhœa, attacks of which came without warning and often placed him in awkward predicaments. His general state of health was feeble and work in consequence an effort. For several years he was treated in the orthodox manner both in London and the provinces. Under advice he had courses of treatment at Harrogate and at a continental spa. He went a long sea voyage. While living out of doors on holiday he was fairly well; directly he returned to work his health failed. One physician sent him to an operating surgeon for an opinion as to malignant disease. The diagnoses made usually rang the changes on irregular gout and neurasthenia. Finally, he was seriously advised to give up professional work on the ground that his constitution was unequal to the strain. In these circumstances he was readily induced to try a purin-free diet, with the happiest results. His condition at once began to improve and in six months all his worst symptoms had disappeared. He has now been perfectly well for over three years and is able to carry on exacting professional work with energy and success.

CASE 2.—The patient, a young woman, suffered for several years from chronic eczema of an irritating character, affecting especially the hands and legs; the hands were disfigured and there was often much pruritus. Several specialists were consulted and many methods of treatment given a thorough trial. Under treatment there was usually temporary improvement, but when local therapeutic measures were suspended the condition quickly became as bad as ever. In despair she adopted a purin-free diet and in order to test its value discarded all local treatment. At the end of three months there was no improvement. She was accordingly advised, while continuing the diet, to give up the customary four meals per day and never to take food more often than thrice; soon afterwards she began to improve slightly. By the end of nine months there was a marked difference and after 18 months she was nearly well, the condition of the skin generally being absolutely different from the state in which it had been for years.

In another case of an obstinate nature diet, though not the only method of treatment, largely contributed towards a successful issue.

CASE 3.—The patient, a young woman, 21 years of age, gave a history of having fallen heavily while getting over a fence so that she became unconscious. Three months later pain and tenderness were noticed in the right arm and shoulder; this rapidly became worse and a few weeks later she had to give up her work as a dressmaker. She attended hospital for two years as an out-patient but no improvement took place. When I first saw her she was scarcely able to move the right arm owing to the pain. The region of the shoulder and upper arm were exquisitely tender: if any pressure were made during examination pain of

an aggravated character would persist for days. Over the upper part of the right scapula a diffuse swelling was noticed; the measurement under the axilla and over the shoulder was one inch more on the right side than on the left, while the right upper arm was half an inch more in circumference; the left shoulder appeared to droop. Being anxious not to overlook sarcoma and tuberculous disease I sent her into hospital to a surgical ward where she was kept under observation for a few days and examined with the Roentgen rays, &c. No thickening of bone was observed and no evidence of organic disease but no diagnosis was arrived at. Shortly afterwards, owing to the swelling of the muscles and muscular tenderness, I brought her before the clinical section of our branch of the British Medical Association as a possible case of myositis. When examined the reason for suspecting sarcoma was readily appreciated. Little definite opinion as to the case was expressed except that it was probably not myositis but neuritis following injury of the brachial plexus. By this time the patient was already under treatment with salicylate of sodium (15 grains at night) and a purin-free diet was being gradually substituted for the meat and tea system adopted previously. Owing to the exquisite tenderness and pain it was not deemed advisable to adopt any local treatment. For six weeks no improvement was noticed; then the excessive sensory disturbances began to diminish. The salicylate of sodium was taken every night for six months and then discontinued, as the pain was much less and the whole condition was better. By this time anæmia, which had been a prominent symptom at first, had almost disappeared and that without any iron being given. At this period there was found to be a marked difference in pulse tension on assuming the erect posture, due to poor tone of the abdominal muscles; a course of exercises for these muscles was therefore instituted. After nine months the patient, who had led a useless life for nearly three years, began to do housework and also a little needlework; three months later she could sew without much difficulty and a few weeks afterwards was able to resume her work as a dressmaker. She adheres to the diet, as she finds that it suits her so well. She is now in a good state of health, has married, and has a baby.

It is unnecessary to bring forward more cases in support of the view that this system of diet is a potent remedy in certain forms of chronic illness; it is also a useful adjuvant in disorders of a less chronic nature and especially in those that are generally designated as gouty, rheumatic, or neurotic. As an instance of the latter may be mentioned the following.

CASE 4.—The patient was a young married woman who had been confined three months previously of her first child. While wheeling her perambulator she suddenly felt faint and overcome and lay down at the side of the road, but did not think that she became unconscious. After a short time she recovered somewhat and was able to make her way home in a dazed condition. Similar attacks recurred and on one occasion when I was in the house. While talking she complained of feeling faint and lay down on the sofa. For a few minutes she was semi-conscious; the face was cyanosed and the pulse was strong. There was no cardiac lesion. This was no attack of syncope. The older generation of practitioners would have called it hysteria. The patient was, however, known to have a large appetite, especially for meat. A diagnosis of vaso-motor disturbance due to an excess of purins therefore seemed reasonable. Under treatment on these lines she rapidly improved and ceased to have the attacks.

The usual objections to the diet are, that it is difficult to digest, that it is impracticable, and that it is insufficient for ordinary life and health. The first is due to the misleading idea that a purin-free diet is necessarily a vegetarian one. The second is at once answered by the fact that no diet can be simpler or less expensive than one selected from milk, cheese, butter, white bread, cereal foods, nuts, and fruit, without any cooking being required. The remaining one carries little weight because it is usually made on *a priori* grounds by those who have had no proper experience of this system as well as the ordinary one. Those who have given both a fair trial in the case of themselves and patients—and there are now a considerable number of such men—are in a position to state that the new system is adequate for nutrition and energy; indeed, they find that the general standard of health is vastly improved and the capacity for work greater. Many of the Japanese subsist on a purin-free diet, yet are not deficient in enterprise or concentration in any kind of work. This is not to be explained away by differences of race and climate, for extraordinary feats of endurance have been accomplished both in this country and in America by athletes trained on a simple diet. Several professional men, taking no other food, have worked for years with vigour and success.

In order, however, that no one may object that while this is all very well for the athlete, who reserves all his energies for one effort, and for the sedentary professional man, yet it will not do for laborious work, I may refer to the case of a puddler who states that he has been a simple feeder for 11 years and that he can undertake to do more than a meat-eater; at his works it is a recognised fact that he and his mates who have adopted this system of feeding accomplish the most. The recent experiments of Chittenden and others have proved that our former notions of the necessities for nutrition are extravagant. For a generation ideas in dietetics have been dominated by the statements of one or two investigators whose conclusions have been unhesitatingly accepted in spite of obvious fallacies. In the first place, diet experiments conducted for a few days or even weeks must be valueless; such investigations require months at least. Most people are upset by a change in diet and a revolution so great as that from the ordinary to a purin-free one must be extended over a period of not less than 18 months. Many people eat too quickly and would find their nutrition improved by more efficient mastication; this should be attended to in all experimental work. The exact state of health at the beginning and end of the investigation must be noted, and records of the pulse tension, of the capillary circulation, and of the hæmoglobin percentage made. Certainly a more accurate estimate must be formed than the popular one which accepts headaches, indigestion, rheumatism, constipation, colds, and influenza as the inevitables of life rather than as evidence of faulty habits. I know several men who after changing gradually to a purin-free diet have found that during a period of years they have remained free from such disturbances, although previously they had not. Their experience has been that they can do more work and that whereas they could only bicycle perhaps 20 or 30 miles without fatigue they can now ride from 50 to 100 without effort.

It has already been hinted, and must be distinctly understood, that though a vegetarian diet may be made purin-free it is not the most desirable, nutrition and vigour being maintained with difficulty. Meat should be replaced by something of greater caloric value, such as cheese; while if purin-containing substances are excluded there is no necessity for vegetables. The staple food should be selected from milk, cheese, nuts, and cereals, with fruit as a sauce. Great variety is possible. In Haig's small work on "Diet and Food" will be found a complete account.

Till recently the results of diet have been largely matters of theory; with the introduction, however, of Walker Hall's purinometer we have an exact test. It is true that many examinations for uric acid and its congeners were previously made, but most of the methods were untrustworthy and too complicated for ordinary clinical work. The purinometer, however, which is fully described in Walker Hall's book, "The Purin Bodies of Food-Stuffs," is a useful clinical instrument suitable for any medical man. It will not satisfy the observer who expects to have merely to pour a reagent into a tube and read off the result; yet it is quite simple and takes up little time, only some 10 or 12 minutes when the test is started and 10 minutes more when the results are worked out. The fallacies are few. As an instance of its value one or two cases may be cited.

CASE 5.—The patient, a woman subject to rheumatism, consulted me on account of extreme depression which made life unbearable. With this instrument the purin nitrogen in 24 hours was found to be 0·35 gramme, an amount ample to account for the symptoms. A change in diet was advised, the exclusion of tea, coffee, soup, and beef tea being recommended as the first stage. A week later the purin nitrogen was 0·23 gramme and the patient felt better. After a few weeks a plain breakfast was substituted for the former one, and a little later meat and fish were also eliminated from a second meal. On this *régime* the register two months after commencing treatment was found to be 0·12 gramme. The patient was vastly better, the depression had quite gone, and also nearly all symptoms of rheumatism.

CASE 6.—The patient, a young man employed in a bank,

complained of a sudden attack of confusion of vision in consequence of which he could not read figures and had to discontinue his work. Six months previously he had had a similar attack which required a week's rest. No disorder or abnormality of the eye could be detected. The patient was, however, in a poor state of health, being anæmic with a feeble circulation; the pulse was of high tension and the second heart sound extraordinarily accentuated. Everything pointed to a vaso motor disturbance in the eye. The purin nitrogen was 0·34 gramme. As he was only 21 years of age there seemed to be no objection to a drastic change of diet; accordingly all tea, coffee, and soup were excluded and also meat and fish except at one meal. This with small doses of potassium iodide produced a notable effect. Ten days later, after the medicine was discontinued but the diet maintained, the purin nitrogen was 0·19 gramme. He has since continued the diet with marked benefit.

CASE 7.—The patient was a young man who suffered from indigestion and colic and had been treated by a modified diet for six months with considerable benefit. He wished to know, as he was not perfectly well, whether anything more could be done. The purin nitrogen was 0·28 gramme. A more rigid dietary was therefore instituted, with the result that the figure was reduced to 0·17; on the stricter system all his troubles quickly disappeared.

To show the discriminating capacities of this instrument I may refer to the case of a woman recovering from influenza. Convalescence was prolonged for weeks and it looked as if she could not pick up. The amount of purin nitrogen in the urine was found to be 0·31 gramme one day and 0·51 on the following day, and gave the clue to the delay. When questioned as to the change in diet there must have been on the two days under review she at once said that there was a great difference, as on the second day, in addition to her ordinary food, she had taken two large cups of strong beef-tea, while on the first day at corresponding times she had had milk. A complete change in diet was made and rapid improvement followed.

One great advantage of the purinometer is that it enables us to check the results of treatment and so not impose more restrictions than are really necessary, and also to refrain when little benefit is likely to follow. For instance, a boy suffering from severe arthritic trouble following diphtheria, who had been treated for over 12 months without improvement, was put on this diet; previous examination had shown the purin nitrogen to be 0·12 gramme one day and 0·15 on the following day. After four weeks' treatment the figures were 0·14 gramme on each of two consecutive days. Clearly, therefore, the diet as taken was of no use. Probably the boy was bolting his food and so vitiating the good effect, for he had a dirty tongue and the teeth looked as if they were not properly used. The parents thought that eating slowly was a fad and would not insist on it; they were therefore advised that there was no difference on the new system and that no advantage could be expected from it on the present lines.

An interesting case was furnished by a woman whose husband sent me a specimen of her urine and wrote to inquire whether my treatment was likely to be of any benefit to her for recurrent headaches and general debility. The figure obtained was 0·22 gramme and as I am never satisfied till the reading is under 0·20 I replied that there were indications for treatment but that no marked result should be expected. Further inquiry elicited that the patient's diet consisted almost entirely of purin-containing substances and especially of a large amount of tea, yet the purin nitrogen was only 0·22 gramme. How was this to be explained? On examining the specific gravity of the urine—an important check—it was found to be low—1012. An obvious conclusion, as the diet was distinctly a liberal one, was that the greater part of the food passed through the bowel without being absorbed. The patient's emaciated condition justified this view, which was further confirmed by the fact that there was usually diarrhœa and the motions were always large. After six weeks' treatment, during which time tea was cut off and the amount of meat diminished, the purin nitrogen was 0·16 gramme and the general condition greatly improved. As might have been expected from the withdrawal of much irritating material, constipation was a little troublesome at first. This is often noticed early in treatment, but is not persistent, for this diet has not the constipating action of meat and tea. Really diet is the most natural and also the most successful way of treating constipation. It is also of special value in cases of recurrent appendicitis and I have now treated many in this way with the result that once treatment was seriously commenced no further attacks occurred. When the attacks are obviously of a simple nature, without the least suspicion of pus formation, this diet ought to be tried in the first instance rather than operation.

In conclusion, I may say that, although this method of treatment is simple in the extreme, yet it requires care and discrimination in its application, and at first, at any rate, the patient must be kept under constant observation. However careful the explanation there is often some misunderstanding; and minor troubles, such as constipation and difficulty of digesting certain foods, frequently develop in the early days of treatment. To insure success thorough mastication must be insisted on. The change of food must be made gradually, not more than one meal being altered at a time in the manner suggested by Haig. At the same time careful records should be kept of the weight and other clinical tests instituted so as to measure the progress. If care is taken in such matters this method of treatment will be found of real value and deserving more general application than it has yet received.

Birmingham.

A CASE OF INFANTILE SPLENIC ANÆMIA.

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THE patient was a male infant, eight months old, who was admitted under the care of one of us to the Hospital for Women and Children at Leeds on March 19th, 1904, jaundiced, very anæmic, and with great enlargement of the spleen. The history was that three weeks before admission the child had been taken to the hospital for circumcision. At that time it was noticed that there was some enlargement of the spleen. After the operation there was some bleeding but otherwise all went well. There was no jaundice until some time afterwards. Careful inquiries elicited no evidence of congenital syphilis. No further history could be obtained.

On admission, when the child first came under our observation, he was obviously very anæmic and moderately jaundiced and in a very asthenic condition. There were no abnormal physical signs in the chest. The spleen extended three-quarters of the way between the umbilicus and the pubes and almost reached the middle line. The liver was slightly enlarged, its edge being about four centimetres below the costal margin in the right nipple line. No urine was obtainable for examination. An examination of the blood made the next day showed: erythrocytes, 1,831,250 per cubic millimetre; normoblasts, 7500 per cubic millimetre (approximately); megaloblasts, 400 per cubic millimetre (approximately); and leucocytes, 16,043 per cubic millimetre. A differential leucocyte count on films stained with Jenner's eosinate of methylene blue (500 cells were counted) gave the following results:—

	Percentage.		Absolute numbers.	
Neutrophils	41·8		7524	per c.mm.
Neutrophil myelocytes	2·0		360	,,
Eosinophils	0·4		72	,,
Mast cells	2·0		360	,,
Large mononuclears	9·8		1764	
Lymphocytes	42·8	53·8	7704	9684 per c.mm.
Large lymphocytes	1·2		216	

Many of the erythrocytes and most of the erythroblasts were polychromatophilic and it was often extremely difficult to decide whether a cell was a very small lymphocyte or a normoblast nucleus with a shred of polychromatophilic cytoplasm around it. During the count of 500 leucocytes 203 normoblasts and 11 megaloblasts were seen. The original count of leucocytes in the Thoma-Zeiss chamber was 25,930 and the figure of 16,000 given above represents the corrected total after deducting erythroblasts. The absolute number of the latter was arrived at in the same way. The large mononuclears, lymphocytes, and large lymphocytes are bracketed together on account of the great difficulty in

making valid distinctions between them. The cells described as large lymphocytes are typical lymphocytes in construction and staining reactions but are extremely large. They are probably identical with Wolff's indifferent lymphoid cells and the large lymphocytes in the blood in acute lymphæmia. Death occurred at 3 A.M. on March 20th.

Necropsy.—A post-mortem examination was made nine hours after death. The body was markedly jaundiced. The thoracic viscera appeared to be normal. The thymus was large but not abnormally so and showed no gross alterations. The liver was somewhat enlarged, firm, and bile-stained. The spleen was greatly enlarged and unusually firm on section, deep red in colour, and weighed 370 grammes (13 ounces). The lymph glands all over the body were distinctly enlarged and their colour was deep red, almost as deep as that of the spleen. Peyer's patches and the solitary follicles of the intestine were also red and hypertrophied. The marrow of the femur and ribs was red. Pieces of the liver, spleen, lymph glands, bone marrow, and thymus were taken for microscopic examination. Some of the material was fixed in 75 per cent. alcohol and after going through 90 per cent. and absolute alcohol was imbedded in paraffin. Other pieces were fixed in a mixture of potassium bichromate (2·5 per cent.) and formalin (15 per cent.) for 24 hours and after remaining in 3 per cent. potassium bichromate, which was changed daily, for a week were washed out, dehydrated, and imbedded in paraffin. The alcohol material was first examined but proved unsatisfactory owing to the coarse fixation of the cytoplasm. The erythrocytes also appeared to have lost their hæmoglobin. The bichromate-formalin material, on the other hand, was very well fixed, there being an almost complete absence of shrinkage and perfect cytoplasmic, as well as good nuclear, fixation. Various staining methods were employed but the most useful was Jenner's eosinate of methylene blue in absolute methyl alcohol used as follows. Sections mounted on albuminised slides, after having the paraffin removed, are washed with absolute alcohol and put into well-corked specimen tubes of Jenner's solution for an hour to overnight. The slide is then taken out of the tube and rapidly wiped clean. A few drops of the solution are then poured over the section and an equal quantity of distilled water is added and mixed rapidly. The slide is then kept moving from side to side and the section from pale blue becomes dark blue if it has many basophil constituents, while the oxyphil elements become pink. It is found that when a scum begins to form on the surface the section is sufficiently stained. It is then washed in water and examined under the microscope (preferably with a water-immersion objective such as Zeiss D[a]). If there is then too much blue, either in the red cells or so as to obscure detail, it is rinsed in a weak watery solution of acetic acid, not stronger than 1 in 2000, till a little blue comes away. It is then dehydrated quickly in absolute alcohol, cleared in pure benzene (crystallisable benzene free from thiophene[1]), and mounted in Grübler's pure neutral balsam dissolved in pure benzene. The method in principle is that of Leishman[2] for staining blood films.

The bone marrow.—(After fixation in formalin and bichromate this was decalcified by Ziegler's sulphurous-acid method before imbedding.) Blood-cell formation is going on actively and mitoses are frequent. Megaloblasts are present. The appearances agree completely with the view originally, we believe, enunciated by Saxer and since upheld by Wolff, Pappenheim, and others. The cell from which all the others can be traced is a cell whose construction and staining reactions are those of a lymphocyte which only differs from the ordinary lymphocyte of the blood and tissues in its greater size and the fainter staining of its nucleus. This is the indifferent lymphoid cell of Wolff and the basophil myelocyte of Dominici.

From this develop the neutrophil and eosinophil myelocytes. The mechanism of their development is as follows. In the cytoplasm, generally in one spot near the nucleus, the specific granulations appear. At the same time, in this spot the cytoplasm begins to lose its basophily and the granules lie in an unstained space. More granules appear until eventually the cell body is full of granules and the cytoplasm has completely lost its basophily. Simultaneously with this granule formation the nucleus becomes smaller and more deeply staining. The myelocytes thus formed develop into the adult polymorphonuclear cell. Mast cells were almost absent in this marrow.

Between the indifferent lymphoid cells and cells like ordinary small lymphocytes there is every transition and we find it quite impossible to say where this small lymphocytic cell ends and the polychromatophilic normoblast begins. As mentioned above, there was the same difficulty of distinguishing in the blood films between the two latter classes of cells. The megaloblasts appear to originate from a cell of lymphocytic type while still large, intermediate between the indifferent lymphoid cell and the ordinary lymphocyte. The nucleus becomes deep-staining before the cytoplasm begins to alter. This transition one of us has observed recently in a case of lymphæmia.

The spleen.—There is no fibrosis or any degenerative change to be seen. The organ is densely packed with erythrocytes and various kinds of leucocytes. The Malpighian bodies appear to be normal at their centre, but at their periphery indifferent lymphoid cells, neutrophil and, in greater abundance, eosinophil myelocytes are seen. The presence of these cells and transitions from the former to the two latter is most noticeable at the edge of the Malpighian bodies and along the finest trabeculæ leading from them. They are present, however, throughout the organ, but are scarcer in the other parts, or else their presence is masked by the vast numbers of red cells and normoblasts which form the most striking feature of the section. The endothelial elements of the spleen pulp are not prominent nor have we found evidence of blood-cell destruction.

The lymph glands.—These bear no resemblance to normal lymph glands but have undergone complete transformation into red bone marrow, so much so that all stages of blood-cell formation can be seen here as well as in that tissue. Giant cells, with large, convoluted and deep-staining nuclei and homogeneous cytoplasm with little affinity for dyes, corresponding to the megakaryocytes of Dominici[3] are frequent. They appear to be phagocytic, for occasional leucocytes and red cells can be seen englobed by them. There is also phagocytosis of red cells by the endothelium of the sinuses. Throughout the glands are masses of amorphous brown pigment, suggestive of broken-down hæmoglobin. These latter also contain many myelocytes and adult leucocytes and normoblasts.

The thymus.—This organ does not show the myeloid transformation seen in the spleen and lymph glands but occasional myelocytes can be seen, most of which are eosinophil. The most frequent situation is in the connective tissue between the alveoli of lymphadenoid tissue. Eosinophil cells, however, seem frequently to be found in the thymus. Normoblasts are seen occasionally in the vessels but that is of little importance since the blood contained about 7500 of them to the cubic millimetre.

The liver.—The lobular arrangement is not at all clear. There does not appear to be any fibrosis or inflammatory change. The cytoplasm of the liver cells is scantier and more reticular than in the adult, somewhat resembling that of the fœtal liver. Some of the cells are degenerate and have homogeneous, diffusely staining nuclei. Bile is seen frequently in the intercellular bile capillaries and occasionally in what appear to be intracellular bile canaliculi. In the connective-tissue spaces of the portal tract and the capillaries throughout the liver there can be seen indifferent lymphoid cells with erythrocytes and myelocytes, both neutrophil and eosinophil, developing from them as in the bone marrow, spleen and lymph glands. Mast cells are scanty. One megakaryocyte was seen in the examination of many sections. In short, it is a fœtal—i.e., a hæmopoietic—liver, to which are superadded some parenchymatous degeneration and the injection of the bile capillaries met with in obstructive jaundice.

We have, then, in this case complete myeloid transformation of the lymph glands and spleen; in fact, the former are as myeloid as the marrow itself. The liver also participates in blood-cell formation, behaving as a fœtal liver.

Dominici,[4] working on animals in experimental infections and anæmia produced by frequent abstractions of blood, has found that in these conditions the spleen takes on the functions of red bone marrow. Hirschfeld,[5] examining the spleen and lymph glands of the human subject post mortem, has found that in severe infections the spleen assists the bone marrow in the production of neutrophil myelocytes and polymorphonuclears and that, to a lesser extent, the

[1] Mann: Phys. Histology, Oxford, 1902, p. 372.
[2] Brit. Med. Jour., Sept. 21st, 1901.
[3] Cornil and Ranvier, Manuel d'Histologie Pathologique, tome ii., p. 593.
[4] Archives de Médecine Expérimentale, 1900, 1901, 1902.
[5] Berliner Klinische Wochenschrift, 1902, No. 30.

lymph glands participate in this function. He frequently found eosinophilic myelocytes in them but very rarely normoblasts. When we turn to anæmias we find less written about the spleen and lymph glands. Wolff[6] found in a case of anæmia due to chronic lead poisoning that the bone marrow was defective in the production of neutrophils, but that the spleen, although not enlarged, was producing them freely. Hirschfeld[7] quotes Rindfleisch as having, in 1881, found normoblasts in the lymph glands of a child with anæmia and marked rickets. Fowler[8] and Melland,[9] discussing splenic anæmia of infants, have very little to say about the histology of the condition, with the exception that Fowler found eosinophilia of the spleen in two cases. R. Hutchison[10] in his Goulstonian lectures for 1904 reviewed the reports of the histological findings recorded by various observers. From these reports it appears that we can as yet postulate no definite morbid anatomy and histology for the condition. He quotes, however, Luzet, Mya and Trambusti, and Hunt as having, in their cases, found the liver to be fœtal as in our case. Fowler[11] mentions jaundice as occurring in three cases, twice transient and once associated with acute hepatitis. We can offer no satisfactory explanation of it in this case. The results of the blood examination were not abnormal for infantile splenic anæmia, and accord well with those given by Fowler, Melland, and Hutchison, except that the count of erythroblasts was very high, 7500 normoblasts and 400 megaloblasts per cubic millimetre. Melland mentions one case with 9353 erythroblasts.

As to the production of the anæmia our investigations give us no clue. The phagocytosis of erythrocytes in the lymph glands was not a very marked feature, while we have seen none of that in the spleen, as opposed to the findings of Harris and Herzog[12] in splenic anæmia of adults. If there had been no blood examination the histology of the blood-forming organs would have suggested myelæmia but the blood examination negatives that supposition. Of course, it is *a priori* possible to say that the child may have died in the pre-leukæmic stage of myelæmia, or that the blood picture of myelæmia was altered by an infection; but the former proposition is susceptible of neither proof nor disproof, while there is no evidence in favour of the latter. Also myelæmia is very rare in children. Infantile splenic anæmia is common enough clinically; many cases thus classified are really examples of anæmia due to rickets or congenital syphilis, but in this case there was no evidence of either. On the other hand, they do not frequently come to the post-mortem room, and as their pathology is obscure we have thought the case worth publishing. The chief importance of it, however, lies in the fact that it shows that under suitable stimulation the indifferent lymphoid cells of the lymph glands can evolve exactly as they do normally in the red bone marrow.

RAPID GENERAL MYASTHENIA GRAVIS.

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As so little is known of this interesting condition it is well to record the notes of every case.

The patient, married, aged 25 years, a copying clerk, was admitted into the Royal Free Hospital on Nov. 10th complaining of weakness. The history of the illness dated back only six weeks. Previously the patient had always been a healthy man and, in fact, was playing football two days before the "feverish attack" about to be described. About the beginning of October he had "influenza" with bad pains in his back and legs, running from his nose and eyes, and feverishness. The attack lasted for about a week but did not stop the patient from continuing at his work. After this he felt weak and four weeks ago noticed a slight difficulty in chewing his food. His jaw muscles seemed to get tired after he had partaken of a few mouthfuls. At about the same time he noticed weakness of the right leg and a few days later difficulty in holding up his head while at work. When tired his head used to droop till his chin touched his chest. His shoulders ached constantly and he could with difficulty hold himself erect. Walking fatigued him quickly. Within the last two weeks the patient had noticed dropping of his eyelids, the left eye being affected first. Since then he had not been able to open his eyes fully, this condition progressing during the day till towards evening he could barely hold them open. At night approached he had difficulty in taking liquid food and said that it had occasionally returned through his nose. Subsequently he noticed weakness in the hands. Two days before admission he suddenly became so much weaker that he fell down once or twice and eventually had to lie down. There was no history of syphilis, alcohol, or pulmonary tuberculosis. There was nothing in the family history bearing on the case. When first seen the patient was very pale and rather thin. The face had a listless, apathetic, mask-like expression. The jaw was generally slightly dropped. There was marked and constant ptosis of the left eye and occasionally less marked ptosis of the right eye. The lower lids always showed two or three millimetres of sclerotic below the cornea. The quality of the voice appeared to be unaltered. The lips and mucous membranes were rather pale. There were no enlarged glands and his skin was quite normal. There were no developmental defects of the hands or feet.

An examination of the various systems showed the following phenomena:—There were no deformity and no tender area in the skull. The supercilliary ridges were extremely prominent. This, with a somewhat prominent lower jaw, gave the face something of an acromegalic appearance. The spinal column showed nothing abnormal. The patient could walk, performing the movements correctly but very weakly and soon got tired. When in bed he could only raise himself with difficulty to the sitting posture. If he read aloud his eyes, jaws, and hands soon became fatigued in the order mentioned, so that his eyelids drooped, he had to support his lower jaw with his hand, and finally allowed the book to fall.

There were no fibrillary tremors of the muscles. An examination of the individual muscles showed that on both sides the triceps, deltoid, and pectorals were very weak and the supinator longus and biceps fairly good; the intercostals acted well, erector spinæ, trapezius, and infraspinatus weakly, while the rhomboids were fairly strong. The grip on both sides was extremely feeble. In the legs no definite paralysis of the posterior or anterior tibial groups was noticed but both were slightly affected, so that they were not as strong as the quadriceps extensor. The adductors were weak. All the muscles reacted well to faradism but as the examination proceeded the contractions became intermittent and finally ceased. This phenomenon was best seen in the muscles markedly paretic but was present also to some extent generally. The reaction to galvanism was normal. Coördination and sensation were unaffected. On testing the reflexes the plantar response was found to be flexor in character and occasionally absent altogether. The knee-jerks were exaggerated but decreased gradually if the attempts to elicit them were persisted in. Ankle clonus was present sometimes. The supinator longus and the palate reflexes were present. Jaw clonus was marked. The lumbar centres were unaffected. There was no loss of control over the acts of defæcation and micturition.

The cranial nerves are best considered seriatim. I. Olfactory normal. II. Optic discs normal. The vision and visual fields were normal. There was no alteration of colour vision and no scotomata were to be found. III., IV., and VI. There were marked ptosis, no squint, and no nystagmus in any position of the eyes. Diplopia was occasionally complained of. The movements of the eyeballs were incomplete, the downward movement being better than that in any other direction. The pupils were about four millimetres in diameter and equal. They reacted to light, accommodation, and convergence. As convergence was imperfect the patient could read better with one eye at a time than with both. V. Sensation over his face was unaffected. The muscles of mastication acted feebly and soon became fatigued. VII. The occipito-frontalis muscle acted pretty well. The

[6] Ibid., No. 36, and Brit. Med. Jour., Epitome, Feb. 7th, 1903.
[7] Loc. cit.
[8] Brit. Med. Jour., Sept. 6th, 1902.
[9] Ibid.
[10] THE LANCET, May 7th, 1904, p. 1253.
[11] Loc. cit.
[12] Annals of Surgery, July, 1901.

orbicularis palpebrarum was very weak. The patient could not firmly shut his eyelids but could only just close them and offered no resistance to attempts at opening them. There was a certain degree of absence and incompleteness of nictitation. The orbicularis oris was very weak. He could not whistle or show his teeth. When he laughed his face assumed a sneering expression owing to the fact that he only raised his upper lip so that the nasolabial furrow did not extend round the corners of the mouth. VIII. Unaffected. IX. Taste unaffected. X. and XI. The patient had no difficulty in swallowing whilst an in-patient although he gave a previous history of that condition. The muscles supplied by the eleventh were, as stated above, weak. XII. He could only protrude the tongue incompletely. There were no fibrillary tremors.

The respiratory and circulatory systems were normal. A blood count showed 5,300,000 red corpuscles and 9600 white corpuscles per cubic millimetre. The pulse was generally about 80 and the respirations were 18 per minute.

The urinary system was normal; the urine was alkaline, turbid from urates, and contained neither albumin nor sugar. The digestive system was normal and the liver and spleen did not appear to be enlarged. His temperature remained normal or rather subnormal. He lost three and a half pounds in weight during the ten days he was in hospital and left with his condition unimproved. He was treated with the usual tonics, iron, arsenic, and strychnine.

It was a most markedly typical case of myasthenia gravis and showed such a rapid progress that in four weeks from a strong healthy man the patient became so extremely weak that he actually fell and later could not raise himself in bed. The onset of the trouble appeared to have followed an attack of influenza and it is possible that this disease may stand in a causal relation to this case. He appeared to have such a difficulty in feeding himself before he came into the hospital that he felt half starved and this may have added somewhat to his rapid increase in weakness. His mental condition was remarkably good and acute; there were a certain depression of spirits and a tendency perhaps to suspicion. Since leaving the hospital he has been under the care of Dr. T. Battersby Jobson of Ilford, who reports on April 11th, 1905, that "he was little better than he was on leaving the hospital."

A SIMPLE TECHNIQUE FOR THE ENUMERATION OF ORGANISMS IN ANY FLUID.

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CRITICAL consideration of the plating-out method of estimating the number of organisms in fluids such as water, milk, sewage, &c., reveals several disadvantages apart from the inaccuracies inseparable from the method. The two chief disadvantages are the multiplicity of manipulations and the quantity of apparatus required, the result being that in routine work the amount of time expended on the process is altogether out of proportion to the value of the information obtained. It will be readily admitted that in actual practice information as to the source of the sample will often indicate the probable number of contained organisms sufficiently well to save the experienced investigator from much unnecessary manipulation; but, on the other hand, cases not infrequently occur in which such information is either not available or if available will not suffice to guide the investigator in the important question as to the limit dilution to be employed. For example, I have received within a fortnight three samples of stored rain water which contained respectively 100, 1600, and 3,000,000 organisms per cubic centimetre. On the basis of these results a rigid application of the method of plating out, as recommended by the committee of experts appointed by the Royal Institute of Public Health,[1] to future samples of stored rain water would necessitate an expenditure of time and energy which could be more profitably employed in other directions. I would submit that for routine work it will be sufficient if in place of the actual number of organisms per cubic centimetre we can state reasonable limits, such as 10–100, 100–1000, 1000–10,000, 10,000–100,000, &c., within which the actual number of organisms must lie and therefore any method of enumeration which fulfils this requirement and in addition offers considerable advantages over the plating-out method in respect to the number of manipulations and quantity of apparatus required is worthy of consideration on the part of the general body of laboratory workers on public health questions. If a method can be devised which will go further and in addition to the above advantages will indicate with an accuracy equal to, if not greater than that of, the plating-out method the total number of organisms per cubic centimetre in terms of 10, 100, 1000, 10,000, 100,000, &c., then a very strong case can be made out in its favour in opposition to the plating-out method as at present practised. I have therefore felt justified in putting before my fellow workers a method of enumerating organisms in any fluid which I have used in routine work for some months past and which seems to me to fulfil the following requirements: (1) Minimum number of manipulations; (2) minimum quantity of apparatus; and (3) accurate estimation of the total number of organisms in terms of 10, 100, 1000, 10,000, &c.

The method in question is not original, being merely a modification of the technique introduced by my former teacher Dr. A. E. Wright for the estimation of the number of living organisms in a given culture and used by him in connexion with his researches on the blood serum. The technique referred to is described in detail by Dr. Wright in his original papers, to which the reader is referred,[2] but in order to give an intelligible description of the modification I have adopted it will be necessary for me to repeat some of the subject-matter of those papers. The method is applicable to the quantitative estimation of bacillus coli, streptococcus, and the spores of bacillus enteritidis sporogenes in sewage effluents in addition to the quantitative estimation of organisms in water, milk, &c., but it will be sufficient for the purposes of description to state the details of the method as applied to the quantitative estimation of organisms in water.

DESCRIPTION OF THE METHOD.

The following is the apparatus required: three sterile diluting pipettes; three sterile watch glasses; eight agar slopes numbered from 1 to 8 consecutively; eight gelatin slopes numbered from 1 to 8 consecutively; and a vessel containing sterile water. The pipette which I use and which I have found to be extremely useful as a general service instrument in the laboratory is graduated differently from Dr. Wright's original model. The stem of the pipette is graduated in ten divisions of five cubic millimetres each, the remaining graduation marks indicating 450 cubic millimetres and 500 cubic millimetres respectively. The safety chamber is dispensed with, the shank of the pipette being merely bent to a right angle in the blow-pipe flame. With the exception of these differences the pipette is constructed and graduated according to the directions of Dr. Wright.

The steps of the operation are as follows. 495 cubic millimetres of sterile water are measured into each watch glass. This quantity is obtained by filling the pipette up to the 500 cubic millimetre mark and withholding five cubic millimetres when injecting into the watch glass. From the water to be examined five cubic millimetres are removed with the pipette—care being taken not to soil the pipette above the five cubic millimetre mark—and added to the contents of the first watch glass. This gives a dilution of 1 in 100. The contents of the watch glass are then thoroughly mixed with the pipette and from this dilution 100 cubic millimetres (obtained by filling twice up to the 50 cubic millimetre mark, interspacing with an air bubble) are planted out in the gelatin and agar tubes numbered 3. Similarly, 10 cubic millimetres are planted out in the tubes numbered 4. From the 1 in 100 dilution five cubic millimetres are then transferred to the second watch glass, giving a dilution of 1 in 10,000. With the same pipette 100 cubic millimetres and ten cubic millimetres of the original water are planted out in the tubes numbered 1 and 2 respectively. (This manœuvre requires a little explanation. If, instead of proceeding as described, tubes 1 and 2 were first seeded and then five cubic millimetres of the original water were added

[1] Journal of State Medicine, August, 1904.

[2] Proceedings of the Royal Society, 1902; THE LANCET, June 1st, 1901, p. 1532.

to the contents of watch glass No. 1 it is obvious that this pipette cannot be used to mix the contents of the watch glass without being re-sterilised, as it has been soiled for a considerable portion of its length with a fluid containing spore-bearing organisms.) The first pipette is then laid aside and another one is taken in hand. The contents of the second watch glass are thoroughly mixed and 100 cubic millimetres and ten cubic millimetres are planted out in the tubes numbered 5 and 6. From the 1 in 10,000 dilution five cubic millimetres are transferred to the third watch glass giving a dilution of 1 in 1,000,000. The third pipette is now taken in hand and after thorough mixing 100 cubic millimetres and ten cubic millimetres of this dilution are planted out in the tubes numbered 7 and 8. The whole of the process described can, of course, be carried out with the aid of a single pipette, provided it be sterilised thoroughly in the flame between each dilution. This, however, occasions considerable loss of time and for rapid working three pipettes will be found essential. The remaining steps of the technique will vary according to the wishes of the investigator. Taking either the gelatin or agar series of tubes the quantity of water (in cubic centimetres) planted out will be as follows: tube 1, 0·1; tube 2, 0·01; tube 3, 0·001; tube 4, 0·0001; tube 5, 0·00001; tube 6, 0·000001; tube 7, 0·0000001; and tube 8, 0·00000001. If it is only desired to ascertain the limits within which the number of organisms per cubic centimetre must lie then the tubes are simply incubated in the vertical position and the results are interpretated as follows. Growth in tube 1, but not in tube 2, would place the number of organisms per cubic centimetre between 10 and 100. Growth in tube 2, but not in tube 3, would place the number of organisms per cubic centimetre between 100 and 1000, and so on, the limits adopted being those in general use for the classification of waters by the number of contained organisms. If it is desired to know the actual number of organisms in terms of 10, 100, 1000, &c., it will be necessary to distribute the water planted out over the surface of the medium and to incubate the tubes in the sloping position in order to prevent the accumulation of organisms at the foot of the slope. If preferred the quantity of water planted out may be spread over the surface of the medium with a glass rod but in actual practice I have found this to be unnecessary as in the case of the larger quantities even distribution can be obtained by manipulation of the tube, whilst in the case of the smaller quantities sufficient distribution can be obtained by means of the pipette at the time of planting out. The following three examples will indicate sufficiently well the results obtainable by this method:—

1. *Sample A.*

Gelatin at 22° C. for seven days:	Agar at 37° C. for 48 hours:
Tube 1. Growth (liquefied).	Tube 1. Growth.
,, 2. ,,	,, 2. ,, (2 colonies).
,, 3. ,,	,, 3. Sterile.
,, 4. ,, (4 colonies).	,, 4. ,,
,, 5. Sterile.	,, 5. ,,
,, 6. ,,	,, 6. ,,
,, 7. ,,	,, 7. ,,
,, 8. ,,	,, 8. ,,

Number of organisms per cubic centimetre of gelatin at 22° C., 40,000.
,, ,, ,, ,, agar at 37° C., 200.

2. *Sample B.*

Agar at 22° C. for seven days:	Agar at 37° C. for 48 hours:
Tube 1. Growth.	Tube 1. Growth.
,, 2. ,,	,, 2. ,, (14 colonies).
,, 3. ,, (1 colony).	,, 3. ,, (1 colony).
,, 4. Sterile.	,, 4. Sterile.
,, 5. ,,	,, 5. ,,
,, 6. ,,	,, 6. ,,
,, 7. ,,	,, 7. ,,
,, 8. ,,	,, 8. ,,

Number of organisms per cubic centimetre of agar at 22° C., 1000.
,, ,, ,, ,, 37° C., 1200 (mean between tubes 2 and 3).

3. *Sample C.*

Agar at 22° C. for seven days:—

Tube 1. Growth.	Tube 5. Sterile.
,, 2. ,,	,, 6. ,,
,, 3. ,,	,, 7. ,,
,, 4. ,, (5 colonies).	,, 8. ,,

Number of organisms per cubic centimetre of agar at 22° C., 50,000.

In the quantitative estimation of bacillus coli in sewage effluents one pipette will be sufficient as washing out with boiling water between the dilutions will meet the requirements of the case and the pipette can then be rapidly cooled by washing out with sterile water. With regard to bacillus coli, &c., the special media and methods of incubation used in such cases will, of course, take the place of the ordinary media and methods of incubation used in the mere enumeration of organisms in water.

In conclusion it will be well to consider the advantages and disadvantages of this technique as compared with the plating-out method. The following disadvantages may be urged against the technique:—

1. The diluting pipette being home-made is liable to be inaccurate. I have had a batch of these pipettes tested against a standard one centimetre pipette and it was found that while the relative error as between pipettes was barely appreciable the absolute error in one centimetre was in all cases less than 0·01 centimetre.

2. The method does not admit of microscopic examination of the colonies which develop. This difficulty can easily be overcome by subculture.

Against these disadvantages the following advantages may be set forth:—

1. It relieves the investigator of all anxiety on the score of the limit dilution to be employed when dealing with unknown waters, &c. By the employment of this technique all unpleasant surprises can be avoided. Whether the sample contain 12 organisms per cubic centimetre, or 12,000,000, the number will be estimated with equal accuracy and beyond the possibility of mishaps, such as "rapid liquefaction of the plates," "organisms innumerable in a thousandfold dilution."

2. The technique permits of very rapid working. With the aid of an ordinary coolie I have found that the whole process takes between six and seven minutes.

3. The small quantity of apparatus required.

4. There is practically no waste in this method as all tubes which remain sterile are ready for use again.

5. The pipettes are easily made, inexpensive, and can be sterilised in the flame without fear of breakage.

6. The whole process can be carried out at the water side, a spirit lamp being added to the armamentarium for the purpose of sterilising the pipette.

7. The labour of counting colonies in a Petri dish is entirely dispensed with and consequently all artificial aids to counting, such as counting discs, cease to be necessary.

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SEVEN CASES OF BERI-BERI.

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SINCE my return to the East I have had the opportunity of observing and of carrying out post-mortem examinations upon seven fulminating cases of beri-beri which have occurred in the District Hospital, Taiping. As some of the observations which have been made are of interest and as the disease has of late attracted a certain amount of attention at home it seems to me advisable to publish these cases to the profession in view of the fact that fulminating cases occurring under the conditions of a local epidemic are rare. The cases all occurred in the same ward. All the cases except one occurred in patients who had been for a considerable time under treatment for beri-beri and the one exception was a case which was brought to hospital in the fulminating state but late in the local epidemic, which lasted about one month. All of the patients in the other wards of the hospital, 400 in number, were receiving similar diets to those which were prescribed for the subjects of the cases which fulminated and no patient in the ward where the epidemic occurred who was not admitted in the first instance for beri-beri acquired the disease. (There may be one exception to this statement in the case of a Chinese, aged 38 years, who was admitted on Oct. 17th, 1904, for dysentery. He recovered from his dysentery but developed beri-beri which was diagnosed as such on Dec. 3rd.) The majority of the patients in the ward who were not suffering from beri-beri were phthisical. One end of this ward was used as a reception ward for all cases that were admitted to

the hospital. In the reception ward the patients remain for about 48 hours and are then transferred to the wards set apart for their respective diseases. No beri-beri has occurred amongst those patients.

CASE 1.—The first case occurred in a Chinese, 53 years of age, who was admitted on August 21st, 1904. He had been nine years in the country and gave a history of having suffered from a disease which was apparently beri-beri for six months. His first bad symptoms occurred on Nov. 14th and he died on the 18th. The treatment of his case was on general principles and no attempt was made to discover the gastric reaction, favourable or unfavourable, to the poison (if such it is) as was done in subsequent cases. He had an iron and arsenic mixture to start with and subsequently, on the increase of his œdema, he was put on a diuretic and when the heart commenced to show signs of failing digitalis was added (Nov. 5th). There were no ankylostoma ova in the stools and until the 14th nothing to excite suspicion of impending crisis in the case arose. On the 14th his pulse was 100° F. and his respirations were 30. He had a pericardial friction rub and the case commenced to fulminate; artificial serum clysters were given twice daily without any relief to the symptoms. The patient died on the 18th at 11 P.M.—that is, three months after his admission to hospital, 96 hours from the commencement of fulmination, and nine months from the commencement of his disease, according to his history.

A post-mortem examination was performed on the day of the patient's death and the most important observation in this case was as usual in connexion with the stomach and intestines. The stomach was dilated and congested with deep purple erosions for a considerable area in the neighbourhood of the pylorus. It contained a mucoid fluid in which a bacillus 2·8 μ long by 1·05 μ predominated (Hamilton Wright's bacillus measured from 4 to 6 μ by from 1 to 1·5 μ).[1]

CASE 2.—The patient in this case was admitted to hospital on July 15th, 1904. He gave a history of having been ill for two months before admission. He was 25 years of age and had been in the country for three years. During the early days of his stay in hospital he was treated in the usual routine manner with mixtures of iron combined with strychnine and arsenic. On Nov. 21st fulminating symptoms appeared and solution of trinitrin was administered with the object of relieving the right heart; the stomach symptoms were severe, pain and fulness being both complained of, the latter being evidenced by the usual epigastric inflation and puffiness. With a view to alleviating the gastric distress the stomach was washed out naturally, one and a half pints of warm water being given by the mouth after the exhibition of 30 grains of ipecacuanha powder. In view of the possibility of the disease being due to the absorption of a toxin from the alimentary tract the patient was put on a 1 per cent. solution of formalin by the mouth, 15 minims every three hours in water. This proved of no avail; the patient only lived to receive four doses and he died at 1 A.M. on the 22nd.

A point worthy of mentioning in this case is that one of the first symptoms which interrupted the course of what might be described as a chronic case and heralded the fulmination was an extreme tenderness over the splenic area. The abdomen generally was somewhat painful on deep pressure and all the abdominal muscular reflexes were greatly increased. The spleen, however, remained normal in size. The fæcal excretion remained normal throughout; the urine, however, was as usual diminished.

The post-mortem examination, made on the afternoon of the 22nd, showed the following conditions: there was deep congestion of all the mucous membranes, an ounce of fluid was present in each pleura, there was deep general congestion of the lungs, the pulmonary artery was full of dark clot, the pericardium contained four ounces of fluid, and the anterior surface of the heart showed punctiform hæmorrhages. All the other organs were congested and the stomach exhibited a dull reddish-purple interior with considerable erosion which was most marked at the pylorus.

CASE 3.—The patient, a Chinese, aged 23 years, living in the town of Taiping, was admitted into hospital on Nov. 1st, 1904. He gave a history of having been ill for two months. He had been eight months in the country. He was treated at first on ordinary lines—iron preparations, &c. On the appearance of fulminating symptoms, however, which set in on the 21st, I put him on permanganate potassium pills (one grain) morning and evening. Subsequently trinitrin and strychnine had to be exhibited and nitrite of amyl inhalations to be employed. A mustard plaster was also applied over the heart on account of the presence of pericardial fluid. The patient died at 9 A.M. on the 22nd.

The necropsy showed deep congestion of the mucous membranes and of the nails and finger-tips, about an ounce of fluid in each pleura, deep congestions of the lungs, cyanotic enlargement of the liver and the spleen, four ounces of fluid in the pericardium, and the usual severe erosion of the pylorus which extended down the jejunum. This patient had only four grains of permanganate of potassium from the time when it was first exhibited until he died; this was hardly sufficient to expect any rapid result from.

CASE 4.—The patient was a man, aged 45 years, who had lived for 18 years in the country. He was admitted to hospital on Oct. 25th, 1904. Fulminating symptoms showed themselves first on Nov. 24th. At 10.30 A.M. on this day he was in such distress with epigastric pain and dyspnœa that I tried an emetic of ipecacuanha powder followed by warm water in quantity but no emesis took place and gastric paralysis had probably already taken place. At 11.30 A.M. his symptoms became alarming and the engorgement of the right heart clear, so he was bled from the median basilic to ten ounces with relief for about an hour. Strychnine was exhibited and a stimulating mixture of digitalis was administered frequently. The patient died in deep distress at 3.20 P.M. on the same day, the illness having run a very rapid course.

With regard to the post-mortem appearances, there was no rigor mortis such as I have frequently observed in beri-beri cases. Both lungs were intimately "glued" to the chest wall throughout their whole surface, presumably due to acute emphysema, due in turn to a paralytic state of the air vesicles probably, the pericardium contained two and a half ounces of fluid, the heart was enormous, and the surface veins were engorged and dilated. The stomach showed the usual purple erosion, which was most marked at the cardiac end in this case; the condition increased in severity towards the lower end of the duodenum.

A differential leucocyte count in this case at the commencement of fulmination showed: polymorphonuclears, 53·3 per cent.; large mononuclears, 7·3 per cent.; lymphocytes, 33·3 per cent.; eosinophiles, 1·6 per cent.; and transitionals, 4·3 per cent. No malaria parasites were observed.

CASE 5.—The patient, a man, aged 29 years, who had lived for five years in the country and who had been ailing for 20 days, was admitted to hospital on Nov. 24th, 1904. Fulminating symptoms occurred on the 28th and death took place at 9.50 P.M. on the 30th, the crisis having lasted 50 hours. On the 25th he was placed upon a mixture containing creasote and iodoform which I have been giving as a routine mixture in the treatment of beri-beri, with the object of checking gastric fermentation and attempting to heal the erosion which occurs in all these cases. He was also given small doses of a cardiac stimulant and a sudorific. On the 28th he refused to take his medicine, saying that it made him feel "worse," and his obstinacy was so great that although other patients in the ward expressed themselves as "feeling better" on the same mixture I changed it in his case to a stimulating mixture containing carbonate of ammonia, digitalis, and nux vomica. On the 29th he was so ill with distressed breathing and all the usual signs of cardiac engorgement that I commenced clysters of normal saline solution with the object of preventing clotting in the right ventricle and, if possible, of diluting the unknown poison in the blood. On this date the reaction of his fæces was highly acid and vomiting started. Saline enemata (six ounces every three hours) were persisted in without amelioration of his condition and on the morning of his death—namely, the 30th—five days after the premonitory symptoms of crisis (namely, dyspnœa, epigastric pain, fulness, and tenderness, and increase of the œdema, with vomiting), the case assuming a dangerous aspect, he was placed on solution of trinitrin and strychnine injections were administered. The following was his physical condition on that date. The pulse was 128, the respirations were 42, the temperature was 99·8° F., the liver was two and a half inches below the costal margin, the spleen was not palpable, and pretibial œdema was increasing. The amount of urine voided in 24 hours was 27 ounces. As the bowels had been constipated

[1] Studies from the Institute for Medical Research, Federated Malay States, vol. ii., No. 2.

for two days the patient was given as a forlorn hope one minim of croton oil. The vomiting, however, continued and death took place at 9.50 P.M.

Post mortem marked rigidity was met with, the finger tips and lips were livid, in the right pleura were found seven ounces of fluid and in the left three and a half ounces, the pericardium contained 16 ounces of fluid which was not diagnosable by percussion 12 hours before death (probably a fulminating hydro-pericarditis—compare the acute emphysema mentioned above), the gall-bladder was distended, the liver was congested, enlarged, and somewhat friable, the spleen was deeply congested, enlarged, and friable, and the kidneys were congested. The erosion was not so marked in the stomach itself, but the pylorus and the first stage of the duodenum were very severely affected. In the intestines patches of erosion occurred with intervals of healthy intestine of from six inches to one and a half inches in length; these erosions occurred throughout the small intestine, and at longer intervals in the large intestine right up to the anus. There was also a subacute appendicitis in this case.

CASE 6.—The patient, a man, aged 43 years, who had lived in this country for 20 years, and who had been ailing for 10 days, was admitted in a condition of pneumogastric crisis on Dec. 4th at 11.30 A.M. He died at 1.15 P.M. on the same day. Nothing could be done for this man as he was nearing dissolution on arrival. I quote the case merely to complete my series.

Post-mortem examination showed rigidity to be only fairly marked. The face, neck, fingers, and lips were almost black. The pleura and lungs were normal, in the pericardium were two and a half ounces of fluid, the heart was large but healthy, there was commencing cirrhosis in the liver, the gall-bladder was full and tense, the spleen weighed one pound and was congested, and the kidneys were congested. There were hæmorrhagic patches about the middle and at the pyloric end of the stomach; these also occurred at the duodenum and intermittently also in the jejunum, becoming more intense towards the lower end; they were very numerous and well marked in the ileum. The cæcum was congested. The first part of the colon was healthy but the erosions occurred again on approaching the lower end as far as the rectum, which in itself was healthy.

CASE 7.—The patient was a Chinese, aged 29 years. He had been resident for a year in the Federated Malay States. The duration of the disease was said to have been one month. He was admitted to hospital on Sept. 20th, 1904; fulminating symptoms developed on the morning of Dec. 23rd and death occurred on the same day. This patient was first placed on a mixture of iron and quassia. On Oct. 7th a stimulating mixture containing carbonate of ammonia and digitalis was exhibited. This proved of no practical benefit to the patient and with a view to determining whether the toxin was more partial to an alkaline or acid reaction in the stomach I put him on a strongly alkaline mixture of soda and carbonate of ammonia on Nov. 29th. The secretion of urine throughout this case was very small, the daily average for the six days commencing Nov. 29th being 12·16 ounces; it contained no albumin but there was a copious deposit of phosphates. On Dec. 8th the urine had diminished to six ounces in 24 hours; he was given a mixture containing iodide of potassium and digitalis and a hot bath twice daily. The stools were examined for ankylostoma ova but without finding any. On the 21st the œdema had become more marked and the general condition of the patient was worse. On the morning of the 23rd the temperature rose to 100·6° F., the œdema was much more severe, and the crisis commenced. The urine averaged for the 15 days previous to this date 6·5 ounces in 24 hours. I made prolonged efforts to save this patient. He was bled to relieve the right heart, the pericardium was tapped to relieve the effusion, and transfusion of saline solution was pushed, but to no purpose, and he died on the operating table with the cannula still in his median basilic vein.

With regard to the tapping of the pericardium in this case I may admit freely that there was more cardiac dilatation than fluid in question and I will also remark that the right ventricle was wounded superficially by my trocar. I would therefore recommend that in future where patients suffering from beri-beri are concerned (in whom the cardiac dilatation may be, and often is, beyond all anticipation in its extent) if the pericardium is to be tapped *let it be by means of deliberate operation*, in which the membrane is to be picked up and carefully punctured in a direction clear of the enormously dilated heart. I would draw attention to the following points in the history of this case: (1) that the urine during the last 15 days of life *was less than the normal amount by 622 ounces*; (2) that the temperature rose at the commencement of the crisis; and (3) that alkaline mixture brought about no improvement.

A post-mortem examination was made within ten minutes after the death of the patient. Rigidity was not yet present, the skin and tissues were very œdematous, the muscles were deeply congested, the superficial veins on the stomach were injected, and the body generally was anasarcous. In the right pleura a small amount of fluid was met with and in the pericardium five and a half ounces of blood-stained fluid had collected. The heart was enormously dilated and flabby (one of the most striking cases of paralytic "jelly-fish dilatation," if I may coin a term, which I have seen); a small puncture on the left ventricle did not penetrate. The liver was congested, normal in size, and the gall-bladder was full (paralysed?); the spleen was slightly enlarged and soft; the right and left kidneys were small and very hard but were apparently normal; the capsules stripped easily; the stomach was small and the mucous membrane was reddened diffusely and considerably thickened; in the intestines there were two patches of ill-marked inflammation in the second and third stages of the duodenum and two round worms were found lower down; and there was a patch of marked inflammation in the upper part of the descending portion of the colon.

In concluding these cases I would remark that in themselves they are instructive in many ways and may, I think I can safely say, add to our knowledge of fulminating beri-beri to some extent. The following points are, I consider, worthy of note as evidence additional to the well-known classical signs. 1. That the commencement of crisis is sometimes marked (*a*) by a rise of temperature; (*b*) by an increase of abdominal reflexes; (*c*) by splenic tenderness and to some extent general abdominal tenderness; (*d*) by diminution in the quantity of urine passed; and (*e*) by a congestion of the mucous membranes. 2. That alkalies favour the development of the disease. Although only one of these cases exemplifies this point, I have, I believe, proved it in many others. 3. That no dilution of the poison in the blood by means of saline clysters or transfusion is possible and that the crisis is, therefore, in all probability a collapse of the nervous system, and the poison may be transmitted purely through nerve tissue. 4. That bleeding is of no permanent value (previously established, I consider). 5. That no alteration of the normal proportions of the leucocytes occurs.

The hospital beds are infested with bugs which are almost impossible to exterminate, owing to faulty construction and the Perak system of blanket bed-covers instead of mats. I have examined microscopically several bugs from the beds of fulminating cases but have found nothing suspicious. I must express my regret that my impending transfer to a district where there is practically no beri-beri will probably interrupt for some considerable time my further remarks upon this disease. I have been obliged thereby to publish these cases in a somewhat rough form but trust that they may be of interest.

Krian, Federated Malay States.

A FATAL CASE OF PRECIPITATE LABOUR.

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AND
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FATAL cases of precipitate labour comparable with the following are not unknown, but fortunately they appear to be of sufficiently rare occurrence to justify the publication of this case, which, though it may be described as gruesome in its details, nevertheless presents some points of interest.

A primipara, aged 26 years, had been examined on Feb. 27th, 1905, with the object of deciding the approximate date of her confinement. She had been again seen on May 10th with reference to the advisability of calling in a nurse; no examination was made on this occasion. At the examination in February a vertex presentation was revealed, apparently in all respects normal, fœtal heart sounds indicating a living child. The husband left for his work at 2 P.M.

on the afternoon of May 11th, the woman being apparently in good health and spirits. On his return at 4.30 he was unable to find his wife, but eventually on forcing an entrance to the water-closet he found her seated there apparently inanimate. She was carried to another room and assistance sent for. Restorative measures were persisted in for half an hour but without success, death having apparently taken place some time previously, probably an hour or more before she was discovered. It was then found that the whole contents of the uterus had been ejected into the pan of the closet, the child's head having completely passed through the lower opening, the body and shoulders remaining above. Forcible attempts were then made to extract the child but without success. The passage of the head through the opening had no doubt been due to the force of expulsion aided by gravity; the task of withdrawing it was probably rendered impossible by the subsequent œdema and congestion due to its dependent position, also possibly to extension. Eventually the commode had to be taken to pieces and the earthenware pan forcibly smashed before the dead body of the child could be liberated. The infant was a female of full size, had apparently reached full term or nearly so, and appeared quite healthy. There had apparently been a good deal of hæmorrhage but it was of course impossible to determine the amount with accuracy.

An examination of the mother was then made and the following facts were determined. The upper segment of the uterus was intact and fairly well contracted; the lower segment and cervix showed bilateral rupture through the whole thickness of the muscular wall. There were several longitudinal fissures in the vagina involving the mucous membrane and part of the muscle wall. The deeper tissues of the perineum were lacerated but superficially it was intact. Death must have been rapid and had presumably been due to shock from the ruptured uterus and from the sudden great diminution of the intra-abdominal pressure, possibly assisted by hæmorrhage, external and also potentially internal by the congestion of the splanchnic area of blood-vessels from the diminished pressure.

The following additional points may have some bearing on the cause of the precipitation of labour. A hæmorrhage occurred in November after two missed menstrual periods. This bleeding rendered the date of conception vague, but as the child was approximately at full term at birth the hæmorrhage in November must now be regarded in the light of a threatened abortion occurring in the third month of gestation. In addition to this the placenta was found to be thinner than normal and apparently not developed in proportion to the child. This fact combined with the history of the threatened abortion may perhaps indicate that there was in this case a tendency to separation in the placenta and membranes and it seems not unreasonable to suppose that such a separation may have occurred and have acted as the actual exciting cause of the violent uterine contractions which must have taken place to produce so fulminant a birth.

The majority of obstetrical text-books give the causes of precipitate labour as consisting mainly of two factors—namely, increased propulsive force and diminished resistance, or both combined. But the auxiliary propulsive force produced by straining at stool is, after all, only physiological, and in this particular case, the woman being a primipara, the second cause, that of diminished resistance, was certainly not present. It would seem probable that in such extremely rapid cases as the one under consideration some exciting cause to uterine contraction, such as separation of the placenta with intra-uterine hæmorrhage, must occur to act as the reflex stimulus.

A peculiar mental disposition is by some authors stated to be present in the majority of these cases and in this instance it is worthy of mention that the woman was of a peculiarly reserved character. While pregnant she shunned her acquaintances and was averse to the aid of a nurse and to medical examination, and it had even been difficult to convince her of the fact that she was pregnant.

From a medico-legal point of view this case also appears to be of interest. A point which presents itself is this: if the birth had not been fatal to the mother it might have been argued with some show of reason that the impossibility of withdrawing the child's head indicated that some means (such as interference on the part of the mother) additional to the forces of expulsion and gravity had been used to get it into the extraordinary position in which it was found.

It would be interesting to know whether in any previous recorded cases a history of hæmorrhage in the earlier months had been reported. It is regrettable that a post-mortem removal of the genital tract, with a view to preservation, was refused.

Camberley.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A NOTE ON "RETURN" CASES OF SCARLET FEVER OF UNUSUAL CAUSATION.

BY H. CAMERON KIDD, M.B. LOND., F.R.C.S. ENG.,
MEDICAL OFFICER TO THE JOINT ISOLATION HOSPITAL, BROMSGROVE.

A BOY, aged two years, was recently discharged from the scarlet fever ward of the joint isolation hospital at Bromsgrove after a detention of seven and a half weeks. The case had been mild and entirely free from complications throughout. There had been no persistent catarrh of the nose or the throat, no otorrhœa, and no sign of eczema, and the child was to all appearances healthy. Desquamation had proceeded normally. He was isolated and "bathed out" in the usual way, being examined by me on the day before his discharge and by the matron on the morning of discharge. A pimple on the buttock was pointed out to the matron by the nurse who last bathed the child but this was regarded as without significance. Eight days later two other cases of scarlet fever occurred in the house to which the child had returned and in another day or two a neighbour's child also sickened. The medical officer of health, when the new cases were reported, examined the boy and found that he presented a patch of raw moist eczema surrounding the anus and extending for quite one and a half inches towards the buttocks in every direction. The pimple which had been noticed before discharge from hospital had undergone no development. On inquiry it was learnt that the first signs of the appearance of the patch of eczema round the anus had been noticed on the day after the child's return home and that the disease had progressed rapidly until in a few days there was a constant moist discharge with intense irritation. Unfortunately, the parents did not think it necessary to seek medical advice. The child was readmitted to hospital where he still remains. Since his readmission two other patches of eczema have developed, one on the leg and the other behind the knee. There can, I think, be little doubt that this child conveyed scarlet fever to others through a moist eczema of the anus which developed after his discharge from hospital, and the case shows the uncertainty which surrounds our efforts to destroy infection.

In the form of inquiry into "return" cases of scarlet fever recently issued by the Society of Medical Officers of Health one query is: "Was there any eczema of ears, nose, or mouth?" In view of this case it appears that we must add the anus to the list of possible sites for infectious eczema after scarlet fever and that the skin disease may develop without any previous warning after as long an interval as eight weeks, and may yet be capable of conveying infection.

Bromsgrove.

NOTE ON THE USE OF CHRYSOIDIN IN HUMAN TRYPANOSOMIASIS.

BY SHEFFIELD NEAVE, M.R.C.P. LOND.,
TRAVELLING PATHOLOGIST TO THE SOUDAN GOVERNMENT WELLCOME LABORATORIES.

AT the end of December last I proceeded to Gondokoro in the course of my duties to meet Captain E. D. W. Greig, I.M.S., in order to arrange a joint investigation as to the prevalence of the tsetse fly. Among his caravan arrived from Uganda was a boy, about 18 years old, in the first stage of sleeping sickness. Trypanosomes in number were demonstrated in the juice of the neck glands. Captain Greig was good enough to hand the boy over to me as I had brought up some chrysoidin on

the chance of having this opportunity. Dr. A. Balfour of Khartoum had been making some experiments with this substance on mosquito larvæ and bilharzia ova which had been more or less successful and it occurred to me that it might be useful in trypanosomiasis. I at once began injecting chrysoidin hypodermically in small quantity—viz., three-twentieths of a grain—as it had, I believe, hitherto only been given by the mouth and later increased the dose gradually to half a grain. The boy remained at Gondokoro, while I went and came for some time (as he had gonorrhœa and possibly syphilis), and it was in consequence of Dr. C. J. Baker's kindness in continuing the treatment in my absence that it was possible to carry out this experiment. A fortnight after the first injection on examination of gland juice only one trypanosome was found after much searching where many had been found previously. Subsequently Dr. Baker made several examinations and found none between this time and the end of January, when the boy was sent on to me while camping on the Bahr-el-Ghazal. Until the first week in March I remained on the river and injected the patient at first every day but gradually diminished the dose to twice a week and I often examined the gland juice without result. The boy rapidly improved and from the first got fat and only suffered occasional pangs from over-eating.

I made a blood count in February, when the boy was quite well, as follows: lymphocytes, 486; large mononuclears, 61; polynuclears, 442; eosinophiles, 7; and myelocytes, 4; total, 1000. At the beginning of March I had to make a forced march of some 330 miles in somewhat difficult circumstances and the boy only got his injection about once in ten days, also he had hard work and less food, his condition getting lower. On arrival at Khartoum at the end of April I was disappointed to find two trypanosomes (of an altered appearance, possibly due to devolution) in the gland juice and at once commenced to inject him as before. The boy now remains at Khartoum, employed in a hospital, to all appearance fat and well, and I hope to be able to report later that he still remains so. It appears to me that chrysoidin has in this one case controlled the disease, at any rate for a time, more easily than arsenic, trypanroth, &c., and I write this in the hope of inducing others to try it and to report.

P.S.—Since writing the above I have received a letter from Dr. A. Balfour at Khartoum, under whose care the boy is, saying that since the injections have been resumed regularly no trypanosomes can be found either in the gland juice or peripheral blood.

Ingatestone.

THREE CASES OF OTORRHŒA THAT HAD RESISTED LONG-CONTINUED TREATMENT CURED BY OTECTOMY AND IRRIGATION.

BY F. FAULDER WHITE, F.R.C.S. ENG.

THE first patient, who was an unmarried female, 55 years of age, had suffered for many years with a discharge from the left ear. She had consulted various medical men, including myself, and had recently been advised by a London specialist to have the radical operation performed. She was sent to me by Dr. H. T. Tomlinson for further advice on account of increasing pain and giddiness. The ear was very offensive. On Nov. 27th, 1904, I performed otectomy. There was little pain or other disturbance. Antiseptic irrigation was carried out twice daily for three weeks when the ear was sweet and the patient left for home. Daily irrigation was, however, carried out by a friend who had been taught to use my attic cannula. Seen in April the ear was quite well, discharge, pain, and giddiness having disappeared some weeks previously. The second patient was a male, 30 years of age. He came to me on Jan. 8th suffering from a very offensive discharge from the left ear. He was still using the remedies of a leading specialist, under whose care he said he had been for about four years. There was a large perforation in the membrane. I performed otectomy on Jan. 22nd. There was little or no disturbance. In less than a fortnight the cavities were disinfected and the ear was well by the middle of February. Seen on May 30th the ear was perfectly healthy and the man could hear a watch several inches from the meatal orifice. The third patient was a boy, 12 years of age. He was sent to me by Dr. W. Richardson Rice for the relief of deafness and otorrhœa which had existed for seven years. On two or three occasions he had seen a specialist who ordered syringing and this had been carried out at home without producing any benefit. On Jan. 15th I performed otectomy in the right ear. Irrigation was carried out daily by Dr. Rice. There was little or no disturbance after operation. There was gradual improvement but it was not till the middle of March that the ear could be pronounced well. Seen in May the ear was healthy and with good hearing.

Coventry.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

METROPOLITAN HOSPITAL.

A CASE OF SPINA BIFIDA.

(Under the care of Mr. WALLACE ASHDOWNE.)

For the notes of the case we are indebted to Mr. R. I. Douglas, house surgeon.

A female child, aged four days, was admitted to the Metropolitan Hospital on April 12th, 1905, suffering from spina bifida. The tumour, situated in the lumbar region, was of about the size of a Tangerine orange, sessile, and somewhat constricted at its base. The base alone was covered with skin which merged gradually into a translucent membrane. There was a suggestion of lobulation but no umbilication. The summit of the sac was raw, suggesting injury during delivery or rupture of adhesions between the sac and fœtal membranes. There was no deformity of the legs or paralysis and the functions of the bladder and rectum were normal. On the 13th the child was lightly anæsthetised and placed in the prone position with the buttocks raised above the level of the body, so that the tumour formed the highest point. Two skin flaps were dissected from the base of the tumour; an opening was then made into the lowest part and to one side of the sac and the fluid was allowed to escape slowly. This opening was carefully enlarged and the cord was found to be adherent to the upper part of the lining membrane of the sac in the middle line. Two small nerves on each side were found, apparently arising from the end of the cord, running on the inner wall of the lower part of the sac forwards to the spinal column; these had to be sacrificed. The lining membrane of the sac was first separated from it and then divided on each side of the cord and allowed with its nerves to fall back into place in the bony groove of the spinal canal and the cut edges of the lining membrane, apparently dura mater, were sutured with fine silk over them. The rest of the sac was removed and the skin was sutured with silkworm gut over the closed dura mater. A collodion dressing was applied and the child was put back to bed in the position in which the operation was performed. Healing took place by primary union and was uneventful except for a rise of temperature for 12 hours on the second day. On the seventh day the stitches were removed and the line of suture was found to be soundly healed. There was no leakage of fluid from the wound. The child was, when discharged from the hospital on May 12th, in good health and is still progressing favourably.

Remarks by Mr. ASHDOWNE.—The fact that the surface of the tumour was damaged and the difficulty of protecting it from further injury, together with the fact that except for the tumour the child was well developed and healthy, led me to decide upon an early operation, and its successful issue is due partly to the skill of the anæsthetist and partly to the favourable anatomical relations of the cord and nerves which allowed of a rapid conclusion of the operation. The membrane to which the cord was attached was easily separated from the sac wall and must have been, I think, dura mater. The nerves which came off from the cord with two exceptions ran forwards across the sac to the intervertebral foramina. No attempt was made to free the cord

from its attachment to the lining membrane but a longitudinal incision was made through the membrane on each side and cord and membrane were allowed to fall back into place. The two small nerves which ran in the inner wall of the sac were sacrificed but, as far as can be made out at present, with no ill result.

KENT AND CANTERBURY HOSPITAL.

A CASE OF NEPHRITIS, WITH ACUTE URÆMIA, ASSOCIATED WITH ACUTE DIFFUSE COLITIS; DEATH.

(Under the care of Dr. HAROLD WACHER.)

FOR the notes of the case we are indebted to Dr. E. Weatherhead, house physician.

A married woman, aged 37 years, was admitted on April 4th into the Kent and Canterbury Hospital, under the care of Dr. Harold Wacher, with a history of having had no action of the bowels for four days in spite of castor oil and enemata and of having frequently passed blood by the rectum during the last week or two. There had been some tenderness and pain about the umbilical region but no abdominal distension and no vomiting.

On admission the patient seemed to be somewhat lethargic and would only speak in answer to questions. There was some tenderness about the umbilical region but no distension or rigidity of the abdomen. The tongue was moist and clean. The pulse was 100 and the temperature was normal. Rectal examination disclosed nothing. The heart and the lungs appeared to be normal. About 6.30 the same evening the patient had an epileptiform fit, from which she never wholly emerged. She remained semi-conscious the whole of the next day (April 5th) and could not be made to take food or medicine. The temperature was now slightly raised (from 99·5° to 100·5° F.). As no urine was passed a catheter was used and the urine was found to be loaded with albumin. Jalap was administered, the patient not refusing the medicine this time, and a hot vapour-bath was given. The bowels acted during the night, a watery motion, slightly stained with blood, being passed into the bed. The next day (April 6th) the patient became more comatose. Now and then, for a few minutes, she would breathe in stertorous fashion, with cheeks blown out with expiration, eyes strongly convergent, and teeth clenched. The mouth also twitched at times. Any examination of the patient brought on these symptoms. In the afternoon she suddenly became convulsed, extremely cyanosed, and died.

Necropsy.—At the post-mortem examination both kidneys were found to be deeply congested, being bluish in colour. The capsules were rather thick; in stripping them off the kidney substance was torn away, leaving a slightly granular surface. There was no marked diminution of the cortex. The kidneys were about normal in size and weighed six and a half ounces each. The large intestine from the splenic flexure downwards was intensely congested and bluish-black in colour. No blood was found inside the bowel. The mucous membrane had the same bluish-black colour, with here and there little slightly raised and roughened patches of greyish appearance. The whole of the wall of the bowel was very much swollen. The rest of the intestines was healthy. The remaining organs, including the brain, presented a normal appearance.

Portions of the kidney and affected bowel were sent away for microscopical examination and the following report was received from the Clinical Research Association: "The kidney shows dilatation of the convoluted tubes and a granular condition of the secreting epithelium in certain areas. Many of the tubules contain granular and hyaline casts and in several places there is a decided increase of the fibrous stroma. The condition is therefore a mixed nephritis, with excess of tubal change. The large intestine exhibits the effects of an acute diffuse colitis and the greyish patches on the mucosa are due to exudation and necrosis. The whole thickness of the wall is œdematous, with many foci of small round cells in the submucosa and destruction of much of the mucous membrane itself."

Remarks by Dr. WEATHERHEAD.—The following points are of interest in the above case: 1. The absence of any œdema throughout the history of the case. Without an examination of the urine there would be nothing—until the advent of uræmic symptoms—to suggest nephritis. Vomiting was absent throughout and headache apparently was not complained of. 2. The occurrence of acute colitis. In his article on Nephritis in Allbutt's "System of Medicine"[1] Dr. W. H. Dickinson gives no description of this form of colitis though he makes special mention of an ulceration of the intestine in association with nephritis—"more particularly about the ileo-cæcal region"—which is the result apparently of submucous hæmorrhage. Dr. W. Hale White[2] gives instances of acute colitis in association with Bright's disease but says "it is certainly unusual." 3. The mixed character of the renal changes. In some respects the kidney presented the appearance of an early stage of chronic interstitial nephritis; in other respects it presented the appearance of acute nephritis. Clinically, the case would seem to be an acute one, but there may have been symptoms at some previous time which were not understood. The patient was in fact laid up with an illness some months ago, of which it was impossible to obtain any definite account. As there was no appearance of hypertrophy of the heart, we may conclude that the nephritis was at all events of not very prolonged standing.

WEST OF ENGLAND EYE INFIRMARY.

A CASE OF DOUBLE CATARACT EXTRACTION FOLLOWED BY GLAUCOMA IN BOTH EYES.

(Under the care of Mr. A. C. ROPER.)

THE patient, a woman, aged 60 years, was admitted to the West of England Eye Infirmary on Dec. 9th, 1898, with well-marked cataract, nuclear and cortical, in each lens. The pupils were active and tension was normal. There was some dacrocystitis on the left side. In July, 1900, the left canaliculus was slit up and the lacrymal condition was energetically treated. On Sept. 27th, 1900, an uneventful extraction without iridectomy was performed on the left side and on Jan. 8th, 1901, a needling of the capsule. The result was D.V.L. + 10 D. = $\frac{6}{6}$; N.V.L. + 14 D. = 1. On Feb. 26th of the same year she came to the infirmary again with a typical subacute glaucoma of the aphakic eye which had been treated by her local medical attendant for a fortnight. Tension was + 2. The cornea was hazy. The pupil was dilated; V. = fingers. A large iridectomy upwards was performed on the same day with escape of vitreous and much bleeding from the iris. On March 7th Mr. Roper's note was: "No fundus reflex. A good deal of blood still in pupil but not enough to account for the loss of fundus reflex. Query retinal hæmorrhage." Three grains of iodide of potassium were given thrice daily. On the 15th the note was: "Media clearing. Red reflex to-day." The eye steadily improved and on June 7th V.L. with correction was $\frac{6}{9}$ partly. Meanwhile, the right lens had become opaque, and in view of the glaucoma in the left eye a preliminary iridectomy was performed on March 25th, 1901. On the 29th the right eye had recovered from the iridectomy and the patient was made an out-patient. She remarked on leaving that the last iridectomy had entirely cured a constant frontal headache which she had suffered from for some time but had not complained of. On July 2nd an uncomplicated and rapid extraction of the right lens was performed and the patient was discharged on the 29th with D. V. $\frac{R. + 9\,D. = \frac{6}{9}\,(3)}{L. + 10\,D. = \frac{6}{12}\,(4)}$. The left eye was therefore losing vision. Mr. Roper next saw her in January, 1903, when vision was with spectacles $\frac{R. = \frac{6}{9}}{L. = \frac{6}{12}}$. The right pupil was covered by a crinkled capsule and both optic discs showed deep cupping. The membrane was needled, freeing some iritic adhesions and causing some slight hæmorrhage from the iris, and on May 4th the corrected V.R. was $\frac{6}{9}$. The patient reappeared on Nov. 7th, 1904, with glaucoma of the right eye. She had fundus reflex but no details were seen. She was taken into the infirmary and was treated with eserine, pilulæ hydrargyrum, &c., reducing the tension to normal. She remained better for three weeks but on Dec. 12th the eye became worse. The field was small, the cornea was hazy and vision was $\frac{6}{60}$. Treatment failing to arrest the glaucoma Mr. Roper determined to excise more iris and this he did on Jan. 5th of this year. There was, of course, escape of vitreous, but the eye speedily recovered and on Feb. 20th the corrected vision was R. $\frac{6}{9}$ (2), L. $\frac{6}{9}$. Mr. Roper last saw her on April 3rd when the corrected vision was

[1] Vol. iv., p. 393.
[2] Allbutt's System of Medicine, vol. iii., p. 942.

R. $\frac{6}{6}$ (2), L. $\frac{1}{6}$ (3), and the fields of both eyes were concentrically contracted to one-quarter of the normal. The eyes were quiet and normal looking and the patient was using a weak eserine drop daily.

Remarks by Mr. ROPER.—The above is a brief abstract of my notes of this interesting case, which is worthy of being put on record. Two points are brought into strong relief—the inveteracy of glaucoma and the remedial value of iridectomy in this condition. The occurrence of glaucoma after cataract extraction must be rare, as I can only recall one other such case in an experience of considerably over 100 cases.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

Puerperal Eclampsia.—Repeated Tubal Pregnancy.—Thyroid-like Structures in Ovarian Cysts.—Deformed Fœtus.—Ruptured Interstitial Pregnancy.—Primary Carcinoma of both Fallopian Tubes.

A MEETING of this society was held on June 7th, Dr. W. R. DAKIN, the President, being in the chair.

Captain J. C. HOLDICH LEICESTER, I.M.S., of Calcutta, reported a case of Puerperal Eclampsia with death on the sixteenth day after delivery from general septic peritonitis, due to rupture of an abscess in the spleen.

Mr. ALBAN DORAN reported a case of Repeated Tubal Pregnancy which had twice been under his observation in hospital with clinical evidence of tubal gestation, first on the right side and after an interval of 12 months on the left. Owing to increasing swelling with pain and hæmorrhage the abdomen was opened and clots together with both tubes and the right ovary were removed. The patient was the subject of pulmonary tuberculosis to which she ultimately succumbed 13 months after the operation. Mr. Doran raised the question whether, in view of the possibility of another abnormal pregnancy taking place, it was justifiable in operating for tubal gestation to remove the opposite tube even when healthy. He quoted three cases of his own in which a normal uterine pregnancy had followed removal of a pregnant tube.—Dr. R. BOXALL mentioned a case in which a normal pregnancy and delivery occurred about a year subsequently to removal of a ruptured tubal gestation.—Dr. HERBERT R. SPENCER said that he had operated on three cases of bilateral tubal pregnancy and in two others had observed intra-uterine pregnancy after tubal gestation.—Mrs. M. A. D. SCHARLIEB mentioned a case of ruptured ectopic gestation operated on in July last, the patient being now five months pregnant.—Lieutenant-Colonel A. J. STURMER, I.M.S., referred to the case which he had recently brought before the society in which, at the time of operation, the opposite tube was found to be red and swollen but was not removed. A year later it was discovered that ectopic pregnancy had again occurred. He consequently thought that it would have been safer to have removed both tubes at the first operation.—Mr. DORAN, in reply, said that every conceivable variation had been observed in cases of tubal pregnancy—repeated in the opposite side, repeated in the same side, simultaneous in the right and left tubes, simultaneous tubal and uterine pregnancy and, lastly, gestation in a tubal stump. Still, the evidence of those who had joined in the discussion supported his opinion that when pregnancy occurred after the removal of a tubal gestation sac it was, as a rule, normal; hence, when the sac was removed it was not justifiable to amputate the opposite tube.

Mr. R. HAMILTON BELL reported two instances of Thyroid-like Structures in Ovarian Cysts. In both cases the cysts were multilocular and had been removed by operation. They showed in each instance appearances resembling those of the thyroid gland. An explanation was doubtless to be found among the following: (1) metastatic growth from a primary thyroidal carcinoma; (2) secondary growth from a normal thyroid gland or from a simple goitre; (3) growth of a teratomatous nature; (4) endothelioma; and (5) colloid degeneration of an ordinary cystic adenoma of the ovary. He was disposed to regard the last mentioned as the most probable explanation.—Dr. H. WILLIAMSON agreed that in many cases the resemblance to thyroid tissue was brought about as the result of pressure exerted by colloid contents in the smaller loculi upon the columnar epithelium of an adenoma of the ovary. But, at the same time, he thought it possible that in some cases an explanation was to be found in a teratomatous origin.

Mr. CHARLES SINGER exhibited and described a case of Extreme Ectopia Vesicæ and Congenital Absence of the Colon, combined with other deformities, in a full-time fœtus which had lived for 14 days.

Dr. H. RUSSELL ANDREWS recorded a case of Ruptured Interstitial Pregnancy in the Left Cornu of the Uterus which had undergone early rupture. The period was only six days overdue and the gestation cavity would but just admit the tip of one's thumb. The uterus was removed by supravaginal amputation, both ovaries being left. But he raised the question of the possibility of preserving the uterus in cases like this where rupture took place early, merely excising the affected cornu and suturing together the resulting raw surfaces.

Dr. C. J. CULLINGWORTH showed and described specimens of Primary Carcinoma of both Fallopian Tubes which he had removed by operation from a woman 41 years of age. For two years previously she had had almost continuous pelvic discomfort, with frequency of micturition and a constant and increasing watery discharge sometimes blood-stained and frequently offensive. The diagnosis was obscure. A month's rest in bed having been followed by no apparent benefit operation was decided upon. When the preliminary enema was given about a pint of bright blood was passed by the bowel and under anæsthesia a small fistulous opening was felt in the rectum four inches from the anus. On opening the abdomen both tubes were found to be affected with malignant disease, the left being much the larger but the uterus was of normal size and no extension of the disease to other parts in the abdomen could be felt. There was no ascites. It was thought that the fistulous opening into the bowel would supply a sufficient drainage. Subsequently some difficulty was experienced in getting the bowels to act. The patient died suddenly 84 hours after the operation.—Mr. DORAN thought it probable that the cancer had developed, as is often the case, in an old hydrosalpinx.

OPHTHALMOLOGICAL SOCIETY.

Cribriform Choroido-retinitis.—The Question of Visual Efficiency.—Subsequent note on a case of Orbital Tumour.—Against the Use of Strong Applications in the Treatment of Ophthalmia.—Subsidence of Optic Neuritis after Removal of Cerebral Tumours.—Ring Sarcoma of the Uveal Tract.—Exhibition of Cases and Specimens.

A MEETING of this society was held on June 8th, Mr. JOHN TWEEDY, the President, being in the chair.

Mr. R. W. DOYNE and Mr. SYDNEY STEPHENSON contributed a note on Cribriform Choroido-retinitis, a Rare Form of Fundus Disease. They described three cases in adult patients of a peculiar clinical type of choroido-retinitis, characterised by large membranous sheets of white exudation lying in the fundus beneath the retinal vessels, and showing few or many round or oval holes, through which the colour and markings of the underlying choroid could be recognised. In some instances the holes might be filled with pigment. There were grounds for thinking that the affection had resulted from acquired syphilis. They rejected the view that the condition of the fundus was the outcome of the metamorphosis of copious hæmorrhages.

Mr. G. A. BERRY (Edinburgh) contributed a paper, which was read by the Secretary, on the Question of Visual Efficiency, in which he suggested a graduated scale representing partial loss of sight for guidance in allotting compensation and awards by insurance societies.

Mr. F. RICHARDSON CROSS (Bristol) communicated a Subsequent Note on a Case of Intra-orbital Tumour previously exhibited before the society, in which he had performed Krönlein's operation, removing a multilocular cyst with recovery of the patient.

Mr. W. E. CANT (Jerusalem) read a paper condemning the Use of Strong Applications in the Treatment of Ophthalmia. In the East there were a great variety of regular and irregular practitioners dealing with the prevalent cases of ophthalmia, some of whom used solutions of nitrate of silver, 30 and 60 grains to the ounce, which did considerable damage to the cornea and conjunctiva. He thought a

strength of 10 or 15 grains to the ounce the utmost that should be employed.

Mr. LESLIE J. PATON read a paper on the Course of Optic Neuritis and its Subsidence after Operation in cases of Cerebral Tumour. The present paper was the result of an analysis of a series of 105 cases of cerebral tumour at the National Hospital, Queen-square, during 1903 and 1904. 20 of these cases showed no optic neuritis; 38 of the remaining 85 were not operated on. Of the 47 cases operated upon 17 died shortly after operation or were never in a condition allowing of proper examination. There remained 30 cases in which it was possible to examine more or less fully the eye conditions subsequently to operation. As regards visual acuity it was found that the cases fell into four main classes: 1. The visual acuity practically unaltered during the whole course of the neuritis or only very slightly diminished. This class included eight cases. 2. The visual acuity markedly reduced at the time of operation, in some cases amounting only to bare perception of light with recovery of vision following the operation, in some cases up to normal. This occurred in 11 cases. 3. Subdivided into two classes: (*a*) those which were practically blind at the time of operation and which regained no vision (six cases) and (*b*) those in which the vision failed markedly despite operation (two cases). A total of eight cases out of 30 in which operation did not save sight. 4. Three cases in which one eye retained good vision and the other became blind or nearly so. Out of a total of 30 cases good vision had been saved in 22. In none of the cases in which the sight was lost was the optic neuritis more severe than it was in some of the cases in which perfectly good vision remained. A subjective symptom in cases of cerebral tumour was transient dimness of vision. This occurred in six of the cerebellar cases in the present series, in two frontal cases, in one parietal case, and in one case of pontine tumour. In another series of 38 cases of optic neuritis in cerebral tumour it occurred four times and these four were cerebellar cases. The occurrence of this phenomenon so frequently in cerebellar cases, the short duration of the attack (usually not longer than three or four minutes), and the fact that it was usually accompanied by an attack of giddiness or by increased headache pointed to its being of central origin caused rather by some vascular disturbance, possibly some interference with the vascular supply of the occipital lobes, than by any change in the optic nerves, but it might, of course, be due simply to a temporary increase in the intracranial pressure causing a temporary strangulation of the optic nerves. Subjective phenomena of a positive character only occurred in two cases. An examination of the relationship of visual loss to site of tumour showed that the five cases of frontal tumour belonged three to Class 1, one to Class 2, and one to Class 4. In 11 cases of parietal tumour four belonged to Class 1, three to Class 2, one to Class 4, and three to Class 3—i.e., where sight was lost. Out of 11 cerebellar cases one came into Class 1, six to Class 2, and four to Class 3. The only pontine case belonged to Class 3. The optic neuritis commenced by increase in colour of the disc with blurring of the upper and lower edges and slight turgescence of the veins. The blurring of the edges spread to the inner margin and then to the outer margin, the central cup filled in, the veins became more turgescent, the smaller vessels on the disc usually invisible filled up, and a condition of steep-edged swelling of a somewhat striate and juicy appearance characterised the completion of the first stage of the optic neuritis. Meantime, hæmorrhages, first of all small and linear and confined to the neighbourhood of the disc, appeared. Later the hæmorrhages were larger and more scattered. The average amount of swelling in frontal and parietal tumours was from three to five dioptres, and in cerebellar cases from five to seven dioptres. Later patches of whitish exudate appeared on the disc and in the neighbouring retina. Macular changes only appeared in a small proportion of cases, five in this present series of 30, one in a case of frontal tumour, one parietal tumour, and in three cerebellar cases. The macular change was of a fairly definite type, a layer of œdema forming a kind of parabolic figure with its apex just inside the fovea and its base at or near the disc forming first. This had a dirty-grey appearance at the fovea in its early stages and later the material seemed to gather into whitish bright dots which towards the disc tended to arrange themselves in a series of seven or eight horizontal parallel lines. They lay in the superficial layers of the retina. When there was more extensive œdema of the retina radiating lines could be seen running out from the fovea as a centre. The occurrence of these macular changes was not necessarily associated with any interference with vision—another point in favour of its being superficial, since it did not seem to interfere with the percipient layers of the retina. At the time of operation the intradural tension was noted to be definitely high in all the cases. The subsidence of the swelling was fairly steady in all the cases, usually taking about two months. In some of the cases, especially when the tumour was cystic, it was much more rapid. In the cases which went on to blindness the disc assumed an opaque papery-white appearance as the swelling subsided and in all these cases the arteries were markedly diminished in size. In the other cases where sight was retained the disc had usually a muddy greyish pink appearance, with a dirty grey centre at the end of two months. As time passed this gradually disappeared and in cases seen at times varying between eight months and two years after operation it was practically impossible to tell from the ophthalmoscopic appearances that there ever had been an attack of optic neuritis. In one case in which there had been marked macular changes the vision was ⅔ in each eye and all that remained of an extreme degree of macular change was a slight disturbance of pigmentation at the macula in one eye and in the other the same pigmentary disturbance at the macula and a small cluster of bright white dots above and to the inner side of the macula.—Dr. J. S. RISIEN RUSSELL said that as regards saving sight, even where it was impossible to localise or to remove the tumour, trephining and opening the dura mater so as to relieve pressure were effective.—Mr. R. MARCUS GUNN said there appeared to be no relation between the degree of neuritis and the size of the growth. Prognosis based on the locality of the tumour would still require a larger series of cases. He referred the temporary eclipses of vision to increase in intracranial tension with pressure on the optic nerve fibres.—Mr. DOYNE mentioned a case of intracranial tumour growing from the left wing of the sphenoid in a woman, aged 30 years, occluding the optic foramen and causing blindness without fundus change on the same side but optic neuritis on the right side.—Mr. PATON, replying, attributed the temporary loss of vision to distension of the infundibulum due to intracranial exudation pressing against the chiasma. It specially occurred in cerebellar cases which involved obstruction to ventricular circulation.

Mr. L. WERNER (Dublin) gave an account with lantern demonstration of Ring Sarcoma of the Uveal Tract originating close to the angle of the anterior chamber accompanied by intense melanosis of the iris and of the angle of the anterior chamber in its whole circumference. The patient, a lad, aged 18 years, noticed the failure in the sight of his right eye nine months before he was seen by Mr. Werner; he also observed that black spots were beginning to form on the iris. On examination the iris was observed to be covered with coal-black patches of pigment, least marked above; there was also a small brown tumour wedged into the angle of the anterior chamber at the outer side. The anterior chamber was deep, although the tension was + 1. The pupil was slightly dilated and there was a deep glaucomatous cup. The boy could only distinguish the motion of the hand before the eye. The eye was enucleated and the patient was in good health one and a half year after the operation. Microscopically the tumour in the angle was composed partly of more or less pigmented spindle cells with a plexiform arrangement and partly of round or polygonal unpigmented cells in alveoli. At the upper and lower margins it extended into the ciliary region and sent flat extensions on to the surface of the iris. The rest of the circumference of the angle of the anterior chamber, and of the ciliary body close to it, was infiltrated with deeply pigmented cells and also clusters of unpigmented cells. The ligamentum pectinatum was choked with pigment cells which extended into the canal of Schlemm and along the perivascular lymph spaces of the anterior ciliary vessels. The surface of the angle was lined by black cells, in a single row, or in a condition of active proliferation, the latter especially below. A large quantity of round pigmented cells which had become free were deposited at the bottom of the anterior chamber. When bleached some of them contained shrunken nuclei but in others the nucleus was normal and sometimes two nuclei were visible. The pigment layer on the iris was either confined to the surface where it

sometimes equalled half the thickness of the iris, or it penetrated into its substance. Pigmented cells were also found lining the crypts and small secondary tumours were found on the iris and in the angle of the anterior chamber. The case was a typical example of ring sarcoma, of which about seven cases had previously been recorded. The paper was illustrated with micro-photographs.—Mr. J. HERBERT PARSONS expressed his appreciation of the communication which he thought hardly emphasised sufficiently the extreme rarity of these cases, the seventh and last of which he had himself recorded.

The following cases and card specimens were shown :—

Mr. G. COATS: Sections of an Eye containing pieces of wood.

Mr. G. W. THOMPSON: (1) Case of Intra-ocular Swelling (Gumma), ? Neoplasm; and (2) case of Intra-ocular Swelling in an Adult (Tuberculous).

Mr. WERNER: Symmetrical Tumours of the Orbits in a case of Acute Leukæmia, with rapidly fatal result.

Mr. PARSONS: (1) Microphthalmia associated with Congenital Orbital Tumour; and (2) Tubercle of Iris.

Mr. G. S. KEELING: Case of probable Orbital Tumour.

Mr. J. H. FISHER: A case of Coralliform Cataract.

Mr. M. STEPHEN MAYOU: Cyst of Pigment Epithelium of the Iris.

Mr. R. R. CRUISE: A case of two Subchoroidal Hæmorrhages in one Eye, with Hæmorrhage in the Disc.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF OBSTETRICS.

Report of the Rotunda Hospital.

A MEETING of this section was held on May 26th, Dr. A. J. SMITH, the President, being in the chair.

Dr. H. JELLETT, in introducing the discussion on the Report of the Rotunda Hospital, said that a certain proportion of deaths had occurred in excess of what would probably occur in future years, but most of them were due to causes which were outside the control of the master. He congratulated the master on the steps which he had taken to prevent sepsis, as he had introduced many important reforms, such as indiarubber gloves, finger-stalls, separate utensils for each patient, &c. With regard to the fatal case of accidental hæmorrhage he asked Mr. E. H. Tweedy how it was that because the membranes ruptured while the plug was being removed he did bipolar version? In his opinion Mr. Tweedy's theory that the angle of the uterine artery could be brought down within reach of a plug was untenable, since when a vaginal tampon was put in and a binder applied outside the uterus was compressed between the two and did not change its position. He criticised the arrangement of the Reports of the Rotunda Hospital, saying that he had had occasion to read many of them for the purpose of compiling statistics, &c., and he found it very annoying when there was always a different arrangement or no arrangement at all. It was very difficult to collect information from a whole series of them, as the subjects did not follow one another in a systematic order, and he thought that the reports would gain enormously in value if Mr. Tweedy would classify his subjects in a systematic order and record them in the same way through his whole mastership.

Sir A. V. MACAN said that he did not consider indiarubber gloves to be of great importance and he could not regard the stoppage of sepsis as being due to those measures. He did not think that the outward application of antiseptic dressings to the vulva could be very important in parturition. If it was the matter had been very insufficiently provided for by nature. He thought that there should be free drainage for the lochia. He agreed with Mr. Tweedy about the abandonment of curettage and thought it was quite time to give it up. He, like Mr. Tweedy, had been disappointed in the antistreptococcic serum and to be of any use it would have to be a mixed one. He had seen a case in which hebotomy was performed and it seemed to him immeasurably superior to symphysiotomy. The only objection seemed to be that a hæmatoma might form.

Dr. R. D. PUREFOY said that he was still a believer in the use of the flushing curette in suitable cases. During his mastership one of his assistants, Dr. Lloyd, prepared a series of cases of rise of temperature in which bacteriological and microscopic examinations were made of the contents of the uterus, taken with every necessary precaution, and in most of the cases the examination was made by Dr. H. C. Earl. Out of 130 cases 73 had streptococci. He believed that the curette, when used in time, removed most of the organisms and the patient was then able to resist the small dose which reached her circulation, therefore he was not prepared to give up the flushing curette. With the flushing curette the amount of pain was very slight and there was absolutely no shock to the patient. In the proceeding advocated the patient was anæsthetised, the hand was passed into the vagina, there was the shock to the patient, the vagina was distended, air was freely admitted, a number of avenues for infection were made or opened up, and then the finger was passed into the uterus. Besides, he did not believe that the finger would remove the débris in the same short space of time as the curette. He was glad to find that the master had not lost faith in constitutional treatment, but why did he recommend mercurial inunction? As to the use of serum, he also had come to the conclusion that it was perfectly useless. He thought that the case of accidental hæmorrhage demonstrated the utter unsuitability of version in these cases. He was glad to see that the master had continued the use of Bossi's dilator in helping delivery and in inducing labour. As to the use of the bullet forceps in plugging the vagina he had never heard of its being done and he would not do it. In his time, after manual removal of the placenta, there was seldom a rise of temperature. He did not use indiarubber gloves. He differed strongly from Mr. Tweedy's plan of a "repeated introduction of the gloved hand into the uterus." Mr. Tweedy differed from most authorities as to the wisdom or otherwise of hastening labour in eclampsia. He himself did not think that labour should be induced if the convulsions had come on but otherwise he thought that labour should be assisted. He noticed in the report that practically there was very little information about the extern maternity.

Dr. W. J. SMYLY said that indiarubber gloves were of great use and especially in handling anything that was septic. The using of sponge holders by the nurses when washing the vulva was also of importance. The statement that there were only three cases of mastitis out of over 1800 deliveries was different from his experience in his own private practice and he thought that it was caused in nearly all cases by the nurses, who frequently contaminated their hands when washing the patient and then infected the nipple, and mastitis was brought about.

Mr. A. J. HORNE, referring to the question of mastitis, said that these cases occurred usually in the second or third week and after the patient had left the hospital, so that probably many returned to the extern department.

The PRESIDENT said that he was glad to see that indiarubber gloves were used and thought them a great step in advance. On the question of reckoning morbidity he thought that there should be a uniform standard on the continent and here; he considered the German method a good one and it should be adopted. He congratulated Mr. Tweedy on his very excellent report.

Mr. TWEEDY, in replying, said that he had to thank the members for the way in which they had received his report. Dr. Jellett differed from him on the question of plugging the uterus for accidental hæmorrhage and, as to the first case, Sir Arthur Macan had objected to his having taken out the plug. This treatment was comparatively new. He was now more firmly convinced than ever as to its efficacy and believed that the plug stopped the hæmorrhage immediately. He thought the case exceptional and had taken out the plug to see whether bleeding still continued and whilst doing so the membranes ruptured. It was then perfectly easy to turn and he did it instinctively. He still did not know what the patient had died from. In dealing with morbidity he said that no morbidity was ever based on the first 24 hours' rise of temperature and nothing else. A temperature of 100·4° F. was the basis of the morbidity standard of many of the continental clinics, but in this country 100·8° had marked the limit until lately. A serious condition of septic disease could not exist with a pulse of 90 or below it. He would certainly like to see a common standard adopted. He attached importance to the temperature and pulse taken in conjunction as the one was a check on the accuracy of the other. He considered that in giving morphine in eclampsia, two grains in the 24 hours were plenty. As to sepsis, Dr. Lloyd had counted 130 cases of poisoning of the uterus with 73 cases of streptococcus poisoning. He thought

that that was very high. Dr. Williams of America once held that streptococci were very common in the vagina, but he had since said that he had pushed in the germs from the vulva and this was what probably happened to Dr. Lloyd and he did not think that anyone would admit the accuracy of Dr. Lloyd's 130 cases. Dr. Lloyd's statistics and Dr. Purefoy's belief in the curette were at variance with the very latest statistics. The serious dangers from curetting were thrombosis and rupture of the uterus. The softened muscular tissue might be curetted away as he had seen done. He had never seen bad results from passing the hand frequently into the uterus. As to the use of vapour baths everyone knew that they were most depressing and eclamptic women died from heart failure. Dr. Smyly had fallen into an error in stating that only one case of mastitis was recorded in this report.

BRITISH LARYNGOLOGICAL, RHINOLOGICAL, AND OTOLOGICAL ASSOCIATION.—A general meeting of this society was held on May 12th, at the rooms of the Medical Society, 11, Chandos-street, Cavendish-square, London, W., Mr. W. J. Chichele Nourse, the President, being in the chair. —The President announced that the council had decided to form a collection of microscopic specimens and that Dr. V. H. Wyatt Wingrave had been appointed custodian. —The President also read a letter of thanks received from Señor Manuel Garcia.—Mr. Mayo Collier showed a man, aged 56 years, on whom he had operated for Malignant Disease of the Tongue. He said that removal of one lateral half of the tongue left the patient in a much more comfortable position than when the anterior two-thirds or half had been removed. In this case the malignant growth was quite small and situated at the side of the base near the palato-glossal fold. The lingual artery on the same side was ligatured and the whole of the glands in the submaxillary triangle were removed. The patient was left with a tongue that was adequately mobile, with speech that was perfectly intelligible, and with taste and mastication very little, if at all, impaired. —Mr. Collier also showed a patient the subject of Stenosis of the Trachea about four inches from the Larynx. In this case an operation had been performed some years ago for the removal of a growth from the thyroid body that was pressing on the second and third rings of the trachea and causing marked obstruction. The present growth consisted of adenomata in the thyroid body and could be felt low down on each side of the trachea. The bulk of the growths had diminished under iodide of potassium. Mr. Collier did not propose to operate unless the discomfort increased.—Dr. W. H. Kelson showed a case of Ulceration of the Nose and Trachea, the patient being a man, aged 52 years. There was no history of syphilis and no tubercle bacilli were found. Some improvement had taken place under iodide of potassium and an alkaline spray.—Mr. H. Clayton Fox said that he considered this case to be most probably one of rhinitis sicca and the condition of the larynx to be the result of mouth-breathing.—Dr. P. H. Abercrombie showed a case of Epithelioma of the Larynx for which Thyrotomy was performed. A pathological report was supplied by Dr. Wyatt Wingrave. The patient was a man, aged 42 years, who attended the Central London Throat and Ear Hospital on Dec. 31st, 1904, complaining of "sore-throat" and slight hoarseness of the voice of about four months' duration. The laryngeal appearances at that date were those of simple catarrh and there was also present chronic rhinitis of the hypertrophic variety. Towards the end of January, 1905, a small shallow ulcer was detected on the left vocal cord in the region of the vocal process and on April 14th a small whitish rough swelling was visible at the spot where the little ulcer had been. This was removed with laryngeal forceps and proved to be epithelioma. Thyrotomy was performed under chloroform on April 19th. No glandular enlargement could be detected and there was only very slight deficiency of movement in the left vocal cord. The usual preliminary tracheotomy was performed and Hahn's sponge cannula was introduced. The thyroid body was split in the mid-line and the growth when fully exposed was seen to be localised distinctly to the posterior third of the left vocal cord and corresponding ventricular band. An incision was carried completely round the tumour and quite half an inch outside it and the mass was removed. The raw surface left was scraped thoroughly with a sharp spoon and swabbed with pure phenol. Iodoform was then puffed on the wound and the thyroid alæ were brought together with catgut sutures. The upper part of the skin wound was sutured and the lower part of the incision, together with the tracheal wound, was left open. The upper sutured part of the skin wound was powdered with boric acid and covered with double cyanide gauze and a bandage. Nothing was given by the mouth for six hours after the operation, when a little cold sterilised water was swallowed, with very little trouble, none escaping by the tracheal wound. The upper part of the wound healed rapidly and the tracheal opening was closed by the fourteenth day. With the exception of a rise of temperature to 102° F. on the third day (which subsided after calomel and a saline aperient had operated) everything went well and the man left the hospital on the eighteenth day.—Dr. Abercrombie also showed a case of Sarcoma of the Frontal Sinus occurring in a woman, aged 75 years, for which a second operation was performed on March 14th last. The growth was found invading the right nasal fossa and extending almost as far back as the sphenoid, but the cribriform plate was not involved. The cavity left after removing the growth was very large and was packed with gauze. The patient left the hospital after two weeks' residence and expressed herself as very greatly relieved by this second operation.—The President showed a Laryngeal Case for Diagnosis. The patient was a woman, aged 25 years, and complained of loss of voice and sore-throat of 12 months' duration.—Dr. L. H. Pegler and Mr. Clayton Fox said that they considered the case to be one of laryngeal phthisis.—Dr. Wyatt Wingrave said that six specimens of sputum had been examined since the patient's first attendance at the Central London Throat and Ear Hospital. None had afforded evidence of tubercle but all contained a plentiful growth of a fungus type consisting of branched and interlacing filaments and oval spores (?) similar to oidium albicans. The sputum swarmed with diplococci and bacillus proteus vulgaris but showed no lung tissue.—Mr. Griffith Charles Wilkin read a paper on the Prevention of Adenoid Growths.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on June 2nd, Mr. C. M. Tuke, the President, being in the chair.—Dr. W. H. B. Stoddart read a paper on the Recognition and Treatment of Mental Disorders in Private Practice. He referred first to the steady increase of insanity since the year 1859, when 1 person in 536 was certified to be insane, whereas in 1904 1 in 283 was the proportion. Dr. Stoddart said that early cases of insanity were frequently overlooked by the general practitioner on account of there being too great a wealth of euphemisms for insanity, such as hysteria, anorexia nervosa, neurasthenia, "nerves," and even "liver." He had no objection to these terms provided that it did not lead to erroneous treatment but he was sure that the diagnosis was too often made in all seriousness when the patient was really suffering from insanity. The most fertile source of error was when the diagnosis of insanity never occurred to a practitioner whose main object was the detection and treatment of physical disease only. He advised the practitioner to allow the possibility of the existence of mental disorder to cross his mind more frequently. Hypochondriasis was one of the greatest snares, in which the mental disorder was more often than not overlooked. Loss of memory should be looked upon more seriously than it generally was, as it was often the first symptom of general paralysis, threatening dissolution of life. Dr. Stoddart considered that most cases of insanity were best treated in a special institution for the purpose. Travel as a means of cure in acute mental disorder he condemned absolutely as being the worst form of treatment. Dements and chronic quiet delusional cases might be treated with benefit at the private houses of medical men as they gave but little trouble. The question as to what cases might be treated at home was important to the general practitioner. When the mental disorder formed part of the general break-up of an aged person an effort should be made to treat the disease at home. Obsessional insanity should also be treated at home, as the every-day occupation in such cases was the best relief from the trouble. Other mental disorders that might be well treated at home were those of short duration, such as delirium of fever or infection, acute intoxications, some acute epileptic states, and some of the exhaustion psychoses. Acute delirious mania could sometimes be treated at home. In such cases it was important to obtain nurses who had had plenty of asylum experience. Insomnia being one of the most troublesome symptoms it was necessary to resort to hypnotics after the usual measures had been

taken without effect. Bromide and hyoscyamus were the best combination for nocturnal restlessness but sulphonal and paraldehyde were the most successful drugs for the insane, the latter having the advantage of being a heart stimulant. When the usual hypnotics failed it sometimes became necessary to resort to a general anæsthetic. With reference to feeding, when the patient absolutely refused food it was necessary to feed by tube either nasally or orally, as it was a most important factor in successful treatment of insanity that nourishment should be given. Dr. Stoddart concluded his paper by enumerating the means of procedure in sending a patient to an institution.—The President thanked Dr. Stoddart in the name of the society for his paper and corroborated his remarks with reference to treatment, particularly impressing upon the members the imprudence of recommending travel in cases of acute mental disorder.—Dr. S. D. Clippingdale referred particularly to cases of anorexia nervosa occurring in private practice, in which cases it was very difficult to carry out the nasal or oral feeding, and suggested rectal alimentation as being more suitable and better tolerated.—Mr. A. B. Kingsford questioned the advisability of administering hyoscine hypodermically in cases of acute mania. He found that hyoscine given by the mouth appeared to be of great benefit and to give quiet sleep, whereas given by hypodermic injection it caused an alarming degree of depression.—Dr. H. P. Potter, in comparing the methods of feeding, expressed his opinion that oral feeding carried out slowly and carefully was the most advantageous. —Dr. H. Campbell Pope spoke of urethane as being a most valuable hypnotic in some cases. He also mentioned an important condition of the urine in so-called cases of neurasthenia—namely, upon using Fehling's test a dark discolouration was found, followed by a black precipitate, probably sulphide of copper.—Dr. Stoddart made a few remarks in reply.

LARYNGOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on June 2nd, Mr. C. J. Symonds, the President, being in the chair.—Mr. H. S. Barwell showed a case of Nasal Tuberculosis and a case of Lupus of the Larynx and Uvula.—Dr. G. C. Cathcart exhibited a case of Multiple Growths in the Epiglottic Region in a man, aged 43 years. These were considered to be growths of the lingual tonsil.—Dr. Atwood Thorne showed a girl, aged 17 years, with Complete Paralysis of the Left Vocal Cord associated with Dilatation of the Left Pupil, Mitral Stenosis, and Hypertrophied Left Auricle.—Mr. P. R. W. de Santi showed a case of Inspiratory Dyspnœa in a woman and Dr. H. L. Lack a specimen of Adenoids removed from a man, aged 59 years.—Other cases were shown by Dr. W. H. Kelson, Dr. StClair Thomson, Dr. Lack, and Dr. R. H. Scanes Spicer.

Reviews and Notices of Books.

The Law relating to Factories and Workshops. By MAY E. ABRAHAM (Mrs. H. J. TENNANT), formerly one of Her late Majesty's Superintending Inspectors of Factories; and ARTHUR LLEWELYN DAVIES, of the Inner Temple, Barrister-at-law. Fifth edition. London: Eyre and Spottiswoode. 1905. Pp. 414. Price 5*s*.

THE law relating to factories and workshops is not summarised by the three Acts of Parliament known as the Factory and Workshop Acts but is contained in these with about 20 others, and in a large number of Orders and Regulations made under their authority. Consequently anyone who wishes to have access to the knowledge of this branch of the law necessarily has recourse to a text-book. He need not be a lawyer in order to require to be informed quickly and accurately upon such a subject. A very large number of persons are directly concerned by the Factory and Workshop Acts in a manufacturing country and ignorance of the law is no defence for him who is accused of breaking it. Medical men are most directly interested in this branch of the law when they hold appointments connected with its enforcement, such as those of medical officers of health and of certifying surgeons, and it is to these especially that a handbook at a moderate price, which contains practically all that they need know, is likely to be useful. It is essential that such a work should be "up to date," and the fact that this volume, jointly written by a lady factory inspector and a barrister, has been republished four times since 1896 shows that the authors have taken care to make it so. The statutes which are new since 1902, the date of the last edition, are not of great importance, but include the Shop Hours Act, 1904, the Shop Clubs Act, 1902, and part of the Employment of Children Act, 1903. This last is one under which any medical man may be applied to with a view to determine the fitness of a child for any specified occupation, and so may be said to be of some direct interest to the medical profession apart from its influence upon the health of the younger section of the population. The new Orders and Regulations since 1904 refer in some cases generally to the sanitary conditions under which work is to be done and in other instances are framed as protections against the inherent dangers of particular processes of manufacture. Medical men not holding appointments of the class indicated above have but little liability under the law so far as the health of factory workers is concerned beyond that of notifying cases of poisoning by lead, phosphorus, arsenic, or mercury, or of anthrax contracted in factories or workshops, to the Chief Inspector of Factories at the Home Office. Medical men holding appointments such as those referred to have to know the law relating to their work intimately and if these are already acquainted with the volume under review from previous editions they do not require that it should be recommended to them. Those who have not before met with it will find it a convenient and well-arranged text-book, not too bulky and certainly not expensive, consisting of two parts: I. A Practical Guide to the Law and its Administration by Mrs. Tennant; II. The Acts, with Notes, by Mr. Llewelyn Davies, and an appendix with the Regulations for dangerous trades and the Orders of the Home Secretary. A full and clear index by the use of figures of different sizes distinguishes between information conveyed in the explanatory Part I. and that which is supplied in the words of an Act or Regulation in Part II.—a very convenient plan.

Electro-diagnosis and Electro-therapeutics. By Dr. TONY COHN of Berlin. Translated from the second German edition by FRANCIS A. SCRATCHLEY, M.D., of New York. London and New York: Funk and Wagnalls Company. 1904. Pp. xiii.–280.

THIS book is written as a guide to students and practitioners who are taking up medical electricity more or less seriously. There is no doubt as to the excellence of the author's method of teaching the subject and it will be sure to commend itself to the readers of the work. The technical part is dealt with in a very brief yet effectual manner, avoiding confusing calculations and complexity of apparatus, which only serve to discourage the beginner. The chief principles are first explained and made clear with a few simple diagrams. Then follows a description of a simple galvano-faradic outfit, also accompanied by a few diagrams to show the different arrangements of circuits. The author then passes to the physiology and the methods of investigation. Under the latter heading the directions are laid down in a most careful and painstaking manner, and it may be said truly that he who reads may easily learn. The plates showing the motor points deserve special mention. Instead of being placed all together at the end of the book, as is so often the case, each is placed nearest that part of the text referring to it. The motor points are shown on a schematic figure drawn on transparent paper. Under this is found a plate illustrating the muscles referred to. These plates are adapted from Quain and Hoffman's muscle plates. In this part the normal reactions of all

the superficial nerves and muscles are given in detail and the pathological changes are dealt with in the same manner in the following chapter. This first part of the volume takes up nearly two-thirds of the whole, the author's contention being that anyone who commands a knowledge of electro-diagnosis can quickly and easily comprehend the electro-therapeutic technical terms, while without such knowledge he learns these terms with great difficulty or not at all. The rule all through is not to confuse the beginner by mentioning innumerable possibilities and variations but rather to represent types which can be easily comprehended and retained. At the end of the book are chapters on other forms of apparatus, static electricity, and Tesla or high-frequency and other forms of constantly varying currents.

The translator is to be congratulated on his share of the work. It is perhaps a fair criticism that he should have kept more closely to the standard anatomical nomenclature and it is difficult to see what good end is served by adopting phonetic spelling in the case of a few isolated words. On Plate III., after indicating the superficial muscles and nerves of electrical importance from the shoulder to the hand, with their *Latin* names, the last of the series is referred to as the "little finger-ball muscles," which is slightly incongruous. These are, of course, mere details and if not adding to its attractions they do not impair the value of a book which is to be commended for its many points of excellence.

A Text-book of Practical Gynecology. By D. TOD GILLIAM, M.D. Illustrated with 350 engravings, a coloured frontispiece, and full-page half-tone plates. Philadelphia: F. A. Davis Co. 1903. Pp. 634. Price, extra cloth, $4.00 net; half morocco, $5.00 net.

IN the introduction to this work the author calls attention to the large part played by the late Professor Marion Sims in the evolution of gynæcology. According to Dr. Gilliam America claims not only the distinction of giving birth to this great and beneficent specialty but has maintained her position in the front rank of discovery and operative technique. We imagine that no one would be prepared to deny that in the production of text-books America still leads the way. Unfortunately, although the amount of work produced by American writers is great, the same cannot always be said of its quality. The present book is a good example of the class of work which possibly finds its appreciators amongst American students but there are many better works on gynæcology in the English language. The style in which the book is written can be exemplified by the following quotation. Dr. Gilliam in pointing out the difficulties which the student at first experiences in acquiring a familiarity with the various methods of pelvic examination compares it to "seeking the middle ounce of mush in a kettle of mush"! It is hardly necessary for us to notice this text-book at any length. Importance is laid on the large part played by a supersensitive condition of the nerves as a factor in the causation of the pain in dysmenorrhœa. In endeavouring to account for the relationship between dysmenorrhœa and anteflexion of the uterus the author tells us that in these cases the endometrium is attenuated and devoid of succulence and is wanting in lymphoid elements. We wonder what is meant exactly by a succulent endometrium? In performing the operation of ventrofixation Dr. Gilliam brings the two round ligaments out on either side through a puncture in the fascia, muscle, and peritoneum (about three-quarters of an inch from the edge of the abdominal incision) and fixes them in this position with a catgut suture, the skin and the fat being meanwhile drawn aside. By this means he claims that better results are obtained than by the ordinary operation. In the chapter on Ovarian Tumours a most interesting case is recorded in which the author successfully removed a cystic tumour of the ovary weighing 176 pounds, the largest tumour ever operated upon with success in Europe or America.

A Manual of Fever Nursing. By R. W. WILCOX, M.A., M.D., LL.D., Professor of Medicine in the New York Post-Graduate Medical School and Hospital; Consulting Physician to the Nassau Hospital. Illustrated. Philadelphia: P. Blakiston's Son and Co. 1904. Pp. 236. Price $1.

THIS volume contains the lectures on fever nursing which were delivered to the nurses at St. Mark's Hospital during the session 1903–04. Dr. Wilcox has selected the material for his lectures with great judgment and discrimination. He has included in the lectures all that nurses should and ought to know, but has wisely refrained from giving any directions as to diagnosis or treatment which might tempt nurses to try to become amateur doctors. The earlier chapters of the book are devoted to a consideration of the general aspects of "fever" and the methods of taking and noting temperatures; then a good description is given of the modes of reducing temperature by means of baths. Nurses may read these remarks with profit. Practical demonstration is undoubtedly of more value than verbal description but many useful hints are here given which nurses will do well to observe. It will be noticed that when writing on "the cold tub bath" Dr. Wilcox remarks: "Vigorous rubbing of the body by the hands of the attendants throughout the bath is an absolute necessity." The combination of massage with cold baths when given for typhoid fever is more frequently practised in America than it is in this country. The various fevers are then considered in detail, information being afforded under the following headings: definition; causation; course and symptoms; varieties; complications; prevention and treatment, including dieting. Directions are given in simple but precise language and the manual can be cordially recommended to all nurses, for in it will be found useful instruction which they may not have opportunities of obtaining whilst receiving their training in general hospitals.

A Text-book of Diseases of Women. By BARTON COOKE HIRST, M.D. With 655 illustrations, many of them in colours. London, Philadelphia, and New York: W. B. Saunders and Co. 1903. Pp. 683. Price 21s net.

THIS work has been written by Professor Hirst as a companion to his text-book on Obstetrics and is the result of 20 years' experience. The author has followed an anatomical rather than a pathological classification as more logical and convenient. The volume, consisting of some 683 pages, is divided into 12 parts. The first part deals with the examination and the local treatment of the patient. The next section deals with anomalies of development in the genital tract. In discussing true hermaphroditism no mention is made of the latest work on the subject with which the author appears to be unacquainted. Part III. deals with the diseases and injuries of the vulva and contains a number of very good illustrations and a very detailed account of coccygodynia.

In discussing complete rupture of the perineum the author mentions the interesting fact that he has appeared in one year as an expert witness in three suits brought for malpraxis as the result of the occurrence of this injury. For the palliative treatment of a cystocele Professor Hirst recommends that a Gebrung's pessary should be employed but as he mentions, and as we have found, this pessary is easily displaced and is very liable to set up ulceration of the anterior vaginal wall. In the operative treatment of this condition the author recommends very strongly that the so-called anterior vaginal sulcus on either side should be denuded and sewn up as well as the removal of an oval area of the mucous membrane of the

vaginal wall in the usual way. By this means he claims that a more permanent and better result is obtained. The various methods of repairing tears of the pelvic floor are well described and if we may judge by the photographs reproduced of some of the cases operated on by the author the results obtained are exceedingly good.

It is much to be regretted that there is not a greater unanimity of opinion amongst writers on gynæcology as to the best classification of the different kinds of carcinoma. In this work we find the terms epithelioma, squamous-celled carcinoma, medullary carcinoma, scirrhous cancer, and malignant adenoma all used without any real distinction being made between them. The multiplicity of the terms used by various writers in discussing cancer of the uterus leads to great confusion on the part of students. The microphotographs illustrating this section are very poor indeed and we are surprised that the author has reproduced such inadequate illustrations. They are worse than useless and only mislead the student. In the operative treatment of cancer of the uterus the combined vaginal and abdominal operation of hysterectomy with as wide removal as possible of the connective tissue round the cervix is recommended. Of late Professor Hirst has employed the electro-thermic angiotribe to divide the tissues of the broad ligament. In this way outlying nests of cancer cells are likely to be destroyed and the risk of implantation of portions of the growth during the operation is much lessened.

In the treatment of bad cases of prolapse Professor Hirst has obtained good results by the performance of anterior colporrhaphy combined with amputation of the cervix and an extensive posterior colporrhaphy. He finds that after this operation the ultimate result is satisfactory and he is somewhat surprised at the number of failures recorded by various European operators. As an operation for the removal of fibroids panhysterectomy is not recommended, for, as Professor Hirst points out, supravaginal amputation of the uterus is to be preferred as an easier and quicker operation with less risk of injury to the ureters and leaving a more natural condition of the vaginal vault. He reserves complete removal of the uterus for cases of malignant disease, for cases of infection of the tumour or of the uterus, and where it is desired to drain the pelvis by way of the vagina. In considering the treatment of inflammatory conditions of the tubes great stress is laid by the author on the good results to be obtained by prolonged palliative treatment. At the present time when operative gynæcology is so much the vogue some of the younger school of gynæcologists are likely to forget how much can be done for such patients without operation by rest and local treatment, and we are glad to see Professor Hirst lending the weight of his authority to this view. He is also strongly in favour of the retention of a part of the ovaries whenever possible and does not believe that the uterus should be removed when the ovaries are on the ground that it is in these conditions a useless organ. The section on tumours of the ovary is a good one and so is that dealing with the diseases of the bladder. The last 100 pages or so are devoted to an account of the details of the operations recommended in the body of the work.

The illustrations are very numerous and some of them are good. The microphotographs are disappointing and most of them show very little. We were much interested in Plate 8 which is described as showing mucous polyps (*sic*) of the cervix. A series of the wax models from which the plate is taken exists in one of the hospital museums in London and is well known to us. As a matter of fact, three of the models represent a fibroid polypus of the cervix and one of them a vascular sessile growth arising from the vaginal aspect of the cervix, certainly not a mucous polypus. The description of the plate is therefore most inaccurate. No doubt this is a small matter but of importance as an instance of carelessness easily avoided and an error which does not tend to increase our confidence in the author's general accuracy.

The book contains some striking instances of the American method of spelling ordinary English words. However, in spite of this blemish—a very annoying one to the eyes of English readers—and of the defects to which we have alluded, the work may be described as containing much that is of value and interest.

LIBRARY TABLE.

Tables for Qualitative Chemical Analysis, Arranged for the Use of Students. By A. LIVERSIDGE, M.A., LL.D., F.R.S. Second edition. London: Macmillan and Co. 1904. Pp. 126. Price 4*s.* 6*d.*—We are glad to find that Professor Liversidge deprecates the far too common plan of allowing the student of practical chemistry to continue mechanically to test mixture after mixture without being required to give evidence of the meaning of the reactions. This is always the danger involved in tables of systematic schemes for qualitative chemical analysis. Analysis by chart is seldom satisfactory inasmuch as the student who is training merely for examination purposes is sorely tempted to take a short cut. So long as he is able to discover what the unknown salt is he gains his immediate object but he may be left with a very unintelligent idea of the rationale of the scheme. Professor Liversidge introduces his subject with some wise words of which the student would do well to take heed. Though we can find no particular novelty in regard to the treatment of the subject yet the author has taken pains to give a satisfactory scheme and to include the characteristic tests of most of the ordinary substances known to chemistry. The sections on organic substances are decidedly good.

The Maintenance of Health in the Tropics. By W. J. R. SIMPSON, M.D. Aberd., F.R.C.P. Lond., Professor of Hygiene, King's College, London. London: John Bale, Sons, and Danielsson. 1905. Pp. 118. Price 2*s.* 6*d.* net.—This handbook on the maintenance of health in the tropics has been written at the request of the Committee of the London School of Tropical Medicine and is published under its auspices. The author divides it into six chapters which deal successively with climate; diet and drinking water; the dwelling house; illnesses of the tropics and their prevention; snake-bite; and wounds. 40 pages are devoted to the prevention of malarial fever and other diseases spread by mosquitoes, the directions given on these questions being very practical. At the end of the work there is a list of necessary medical equipment. The advice given throughout is sound and is set forth in clear and simple language. The book is illustrated in a useful way and will be of service to those residing in, or visiting, the tropics.

Manual of Diseases of Children. By JAMES BURNET, M.A., M.B. Edin. Edinburgh: E. and S. Livingstone. 1905. Pp. 406. Price 6*s.* 6*d.* net.—This manual comprises a brief outline of the diseases of infancy and childhood. Theoretical discussions and morbid anatomy find no place in the volume. Brief considerations of diseases of the skin and also of the nose, throat, ear, and eye are included. The book is valuable so far as it goes and it is written in a clear and straightforward way but on many questions the information is insufficient for the practical treatment of cases. However, the study of the volume will serve to lay a good foundation for further reading and observation on the subjects of which it treats; this is the author's hope. Eight plates illustrate the volume. Students will find the book useful.

Mucous Membranes, Normal and Abnormal, including Mucin and Malignancy. By W. STUART-LOW, F.R.C.S. Eng., Assistant Surgeon to the Central London Throat Hospital. London: Baillière, Tindall, and Cox. 1905. Pp. 60.—The substance of this carefully thought out monograph was originally given as a lecture at the Medical Graduates

College and Polyclinic. Those who make an attentive study of the nature, functions, and probable ulterior destiny of mucin will admit it to be of the first importance in the animal economy. Mr. Stuart-Low says that "one of the most important actions of mucin, and one which has hitherto been altogether overlooked, is as a bactericide." It is evident that mucin fills a potent part in the defence of the body against bacterial attack. Dust and microbes do no harm if they fall on healthy cutaneous structures, nor can they do much harm by impinging on sound mucous membranes; but, falling on impaired tissues, great havoc and disaster may follow. With regard to the possible relation between mucin and malignancy the author writes: "I have now carefully observed for years a large number of cases of malignant disease and have never yet seen one that was not decidedly hypomyxiatous and that had not been so for years previously." ..... "Normally, there is always a layer, however thin, of mucigenous material which separates the constituent cells in every tissue and membrane throughout the body; in carcinoma, however, the cells are not thus isolated but touch one another. Has this no causative significance? In old age the intercellular material undergoes a wasting change and, as a result, its resistive power against the ingrowth of epithelial cells is lessened and the onset of carcinoma is favoured." ..... "A study of the distribution of mucus-manufacturing structures reveals the striking fact that where mucus normally is least abundant malignant disease is most frequently located." He is inclined to believe that the hypomyxiatous state is a forerunner of the cancerous, especially in view of the fact that three-fourths of all cancer in man occurs in the alimentary canal. The topical application of mucin in carcinoma certainly retards growth, soothes, and has a marked cleansing effect. The author is indebted to Dr. Walker Overend for the nomenclature which indicates the changes that may occur in mucus and mucous membranes in the diseased conditions. He is inclined to believe that orthomyxia is conducive to healthy old age and he has not seen one healthy old man who was not orthomyxiatous. We have read this brochure with considerable interest. The author's views are very clearly and practically stated. He remarks that if practitioners will apply the principles arrived at from this study they may "gain a rich return in their daily medical practice."

JOURNALS AND MAGAZINES.

IN *Medical Electrology and Radiology* for May an editorial article deals with a circular—which is printed in full—issued by the governors of Guy's Hospital to the effect that they are prepared to accept paying patients for treatment by Finsen light, x rays, radium emanations, high-frequency currents, static, faradic, and galvanic electricity, and vibratory massage. They offer by way of an excuse for this procedure that they "are anxious to recoup themselves for the many expenses incidental to the maintenance of this large department in which poor cases are treated free, but they are desirous that paying patients should only attend upon the recommendation of a general practitioner." In his comments the editor says that this "action of Guy's Hospital surely raises the vexed question of unfair competition on the part of the charitable institution with the practitioner. There are many medical men who are proficient in this work and have adequate apparatus who would be glad to take patients on the terms proposed in the circular. ..... Moreover, if this principle is admitted it is equally logical to have surgical consultations followed if necessary by operation at an arranged fee, on the plea that the furnishing of the operating theatre has cost the institution so much that some return for the money expended must be sought. ..... It is much to be hoped that the governors will find it expedient to withdraw this scheme which, though promulgated doubtless with good intent, does not redound to the credit of an institution with such noble traditions as Guy's and which cannot but be regarded as a reflection on a body of medical men who are no less willing to adapt their fees to suit the less fortunate of their fellow creatures than their medical or surgical colleagues." Dr. Lewis Jones contributes a valuable paper on Interrupted Currents in Medical Work. The characteristics of the currents given by induction coils and commutators under varying conditions are illustrated by means of tracings obtained with a Duddell's oscillograph. These tracings, taken with certain observed effects of the various currents on the tissues, have given knowledge not attainable by any other means. It would appear from this paper that the induction coil will for some purposes be displaced by a constant current interrupted and reversed by a commutator driven by mechanical means. The paper should be studied by those interested in medical electricity. Dr. W. Ironside Bruce contributes the notes of a fatal case of cerebral hæmorrhage occurring while under electrical treatment. The technique of Sabouraud and Noiré in the treatment of tinea tonsurans by the x rays is given as an abstract from *Annales d'Electrobiologie et de Radiologie*. There is also an interesting digest of American electro-medical literature by the American editor. The number concludes with an account of the proceedings of the British Electro-therapeutic Society's meeting in April, giving the discussion on the paper by Dr. Lewis Jones already referred to and also a paper by Dr. W. F. Somerville on High Frequency in Insomnia.

Reports and Analytical Records FROM THE LANCET LABORATORY.

OPHTHALMIC CAPSULES.

(DUNCAN, FLOCKHART, AND CO., EDINBURGH; AND 143, FARRINGDON-ROAD, LONDON, E.C.)

THESE capsules are made of fine gelatin and are pear-shaped. Their long tapering neck distinguishes them from the ordinary capsules used in medicine. On account of the soft nature of the gelatin the capsule may be used directly for administering an ointment to the eye without risk of injuring it. In order to release the ointment it is only necessary to cut off the extreme end of the long neck with scissors and to press the capsule gently. Ointments are prepared having for their base a neutral white paraffin jelly containing atropine, cocaine, or the yellow oxide of mercury. Any other suitable ophthalmic formula may be made up.

"ARTOX" WHOLEMEAL FLOUR AND BREAD.

(APPLEYARDS, LIMITED, ICKLES AND MASBRO' MILLS, ROTHERHAM.)

By a careful process of manufacture "artox" wholemeal flour has been specially adapted for dietetic requirements. As is well known, one of the objections to wholemeal wheat flour is the presence in it of more or less coarse particles of bran which are apt to irritate the intestinal canal. On this account it is probable that though wholemeal flour contains a greater proportion of nourishing constituents than does ordinary white flour, yet this additional proportion of nourishing constituents is not completely available owing to the action of the coarse branny particles in hurrying the partially digested mass out of the bowel. According to microscopical examination the fibrous particles in "artox" wholemeal flour are very finely divided, so that the otherwise irritating properties of the wholemeal is reduced to a minimum and at the same time certain valuable food constituents are released from the cuticle. The chemical composition of "artox" flour indicates a nutritive value superior to that of ordinary white flour since the former contains the entire constituents of the wheat berry. Our analysis gave the following

results: moisture, 13·10 per cent.; mineral matter, 1·10 per cent.; proteid, 13·05 per cent.; fat, 2·60 per cent.; fibre, 2·90 per cent.; and starch, 67·25 per cent. A really excellent bread may be prepared from the flour and it has the peculiar attractive flavour and texture of a loaf made from the entire constituents of wheat. A sample of the bread gave the following results on analysis: moisture, 46·09 per cent.; mineral matter, 1·37 per cent.; proteid, 7·56 per cent.; fat, 1·40 per cent.; fibre, 1·50 per cent.; and starch, 42·08 per cent. Here again analysis shows a maximum proportion of the food constituents of wheat. The bread has the advantage also of keeping its moistness and its "nutty" flavour for a comparatively long time. It is a pity that the tendency of modern milling methods is to deprive flour of part of its nutritive as well as appetising qualities. There can be no reproach of this kind in the case of "artox" flour and bread.

THERAPEUTIC YEAST.

(AGENCY: COOPER AND CO., 20, GLOUCESTER-ROAD, LONDON, S.W.)

Beer yeast has long been employed in therapeutics but hitherto in a more or less unscientific way, and it is desirable that, in medicine at any rate, a pure culture should be employed. Moreover, under the conditions in which ordinary beer yeast is produced it is doubtful whether it would continue to serve as an active agent; in the stomach, for example, an acid fluid is encountered and there is a relatively high temperature, both of which are calculated to operate against the energies of the ferment. Recently a grape ferment has been employed for the purpose which is grown in grape sugar solution at a temperature of from 95° to 100° F. It is argued that in this case the ferment is educated to both an acid and a warm environment, so that it will live in the gastric organ, where it is assumed that it elaborates a substance which is antagonistic to the germs, for example, of furunculosis. It is even stated that the administration of an active culture of grape ferment has been of benefit in diabetes. It has also been used in general disorders of nutrition. We have examined the liquid supplied for the growth of the ferment and that containing the ferment itself. The ferment appears to consist of saccharomyces ellipsoidens. On adding the ferment to the grape juice a brisk fermentation ensues in a few days and the yeast multiplies rapidly. At this stage the fermenting fluid is given to the patient. The method of treatment is reported upon very favourably on the continent, and especially in France, and partly on this account and partly because it presents a means of exhibiting a pure ferment in an active condition a trial seems to be called for in this country.

ROBB'S MILK FOOD.

(A. ROBB AND CO., 79, ST. MARTIN'S-LANE, LONDON, W.C.)

Whilst admitting the dietetic merits of the soluble milk foods of this firm in an analytical notice in THE LANCET of Feb. 11th, 1905, we suggested that in the case of food No. 2 the proportion of carbohydrates might be reduced with advantage and that of the fat and the proteid correspondingly increased. According to the analysis of a further sample we have received this has been done, for the proteid now amounts to 15·67 per cent. instead of 7·60 per cent. and the fat to 12·80 per cent. instead of 4·80 per cent. We regard this as an earnest endeavour on the manufacturer's part to make this preparation conform to the particular physiological requirements of an infant's food.

GARCON COFFEE.

(W. FORSTER AND SON, 9, PHILPOT-LANE, LONDON, E.C.)

We have carefully examined this coffee and the results are in perfect accordance with the statement that the coffee is pure and contains no chicory. In our experiments we obtained from it 0·84 per cent. of caffeine, while the soluble extract amounted to 27·04 per cent. It is rarely, in this country at any rate, that coffee is found which yields such a strong and agreeable aromatic infusion as does this sample. The reason for this is that it has been roasted by the French method—that is to say, a small quantity of sugar is thrown into the roasting cylinder just before the process is finished. This small addition is quite harmless and improves the coffee both in regard to its aromatic quality and its intensity of colour. After trying coffee roasted in this way few people, we imagine, would resort to the use of chicory which thickens, it is true, the infusion but spoils its flavour.

HANSEN'S JUNKET TABLETS.

(MR. C. G. SORENSEN: 77, ST. THOMAS'S-STREET, LONDON BRIDGE, S.E.)

We placed these tablets under practical test and were able to prepare a very satisfactory junket. Emanating as these preparations do from the Hansen laboratory at Copenhagen, Denmark, in which so much excellent work has been done on the cultivation of yeast and enzymes, such a result might have been anticipated.

(1) SWEDISH FISH BALLS; AND (2) BATH AND HOME AMMONIA.

(THE CROWN AND LILY GUARANTEE CO., 85, GRACECHURCH-STREET, LONDON, E.C.)

1. The fish balls so adroitly and appetisingly prepared in Sweden are well known by those who have visited that country. We have received a sample of tinned specimens and it is stated that the preserving process is conducted under scientific and hygienic supervision. This we can quite believe, for the fish balls were in an excellent state of preservation, there were no signs of corrosion of the tin, and there was no evidence of metallic contamination having taken place. As a matter of fact, the contents were slightly alkaline in reaction which would account for the surface of the tin keeping bright and clean. The balls are composed of fish and bread and have a good flavour when suitably prepared. 2. The above agency has also submitted to us a sample of fluid ammonia intended for home use. We have no novelty to remark in regard to this preparation but we may call attention to the fact that ammonia is a poison and therefore some precautions in regard to its handling should be printed on the label of the bottle. On the present label we can find no such warning.

SKIPPER SARDINES.

(ANGUS WATSON AND CO., 30, CLOTH MARKET, NEWCASTLE-UPON-TYNE.)

These sardines are stated to be caught, cured, and packed in Norway and they are certainly very good. The fishes are evidently packed in genuine olive oil; they are quite small in size. The flavour is delicately "smoky" and decidedly appetising.

MANHU DIABETIC FOODS.

(THE MANHU FOOD CO., LIMITED, LIVERPOOL, AND 23, MOUNT PLEASANT, GRAYS INN-ROAD, W.C.)

The question as to whether carbohydrates may be added with safety to the diet of the diabetic patient depends so much upon individual response that it does not seem possible to generalise in this matter. In the Goulstonian lectures recently delivered before the Royal College of Physicians of London Dr. W. Cecil Bosanquet stated that "nothing seems more certain with regard to the treatment of diabetes than that each patient must be a law to himself and that no general rule can be laid down for guidance. In some cases more than in others less carbohydrate food can be tolerated." Of the Manhu Diabetic Foods it is said that the carbohydrates are so modified in the process of preparation that they are easily digested and easily assimilated and in fact yield their oxidation products without aggravating the disease. The proportion of carbohydrate is, however, according to our analysis, the same as that contained in wheat flour but owing to a special mode of treatment the cells yield more readily to the action of diastase and of acids. All that can be said therefore is that the starch has been made more easy of digestion. The foods comprise, besides flour, diabetic biscuits, diabetic macaroni, and some preparations of barley.

MEDICINE, ITS PRACTICE AND ITS PUBLIC RELATIONS.

CHAPTER XVI.[1]

THE PRESENT STATE OF MEDICAL EDUCATION (*Continued*).

The Multiplicity of Examinations.—Mr. T. Pridgin Teale's Views.—Professor F. Y. Edgeworth on Chance in Examinations.—Sir William Stokes's Views.—The Faults of the Examination System.—Centralisation or Decentralisation.—The Lightening of the Curriculum.

THE medical education of the London student has been treated separately at some length because his circumstances are not only so peculiar but also so gravely important to the community. That the clinical material supplied by the metropolis should be properly utilised is of national, and more than national, importance, and that the teaching of London, possessing such material, should not be recognised by students as among the best teaching of the world is lamentable. But there is reason to hope that the London schools have "touched bottom" and that we may soon see them restored to their former proud position and aiding as they should in the educational developments that are imminent in the near future. For the medical curriculum, as it at present exists, does not defy criticism, it does not even escape reprobation, even though it be to all intents and purposes uniformly arranged at the different centres and be watched over with undeniable vigilance by the General Medical Council. The Council itself has now become restless in respect of its educational duties, for it has become manifest that the demands made upon the students at their examinations are seriously interfering with their clinical studies. As we have seen, the fifth year of the student's curriculum was designed to be devoted entirely to the study of hospital practice. Bookwork of all sorts, whether general (mainly preliminary) like the literature of physics, or special (mainly professional) like that of anatomy and physiology, was to be put behind the student's back. This was the project of the General Medical Council when the curriculum was lengthened from four to five years. It was recognised at that date, now 15 years ago, that the student was required to be proficient in so many different subjects, that he had not time in a four years' curriculum to make himself acquainted with all the bookwork imposed upon him by the range of his subjects, if he was to give proper attention to the clinical and practical side of his training—that is to say, the side of his training which, as far as the public goes, is the only one that counts. All his hours were spent in grounding himself for the reception of professional learning, hardly any time was left for the actual acquisition of that learning, and none for its practical application. Therefore the extra year of study was given him, or imposed upon him, to be devoted to clinical work. But the extension of the curriculum has not answered the expected purpose. Indeed, in the opinion of many people—and not the least observant among those who have studied the subject—the veritable position has again been arrived at to meet which the five years' curriculum was devised.

At the session of the General Medical Council last winter this was so far admitted that when a motion was debated with regard to the arrangement of the student's work the speeches of the members showed a general belief that some modification of existing arrangements is wanted. It was made clear that owing to the increased demands made upon medical students in the earlier part of the curriculum many of them do not pass their examinations in the preliminary subjects—physics, chemistry, and biology—until after they have made a beginning of the professional section of the curriculum. This precludes the undivided attention which the study of such subjects as anatomy and physiology requires, while the fifth year of the curriculum becomes overloaded, bookwork intruding upon the practical routine. Some authorities think that the passing of the preliminary scientific examination should be made compulsory before the admission of students to the study of anatomy and physiology, others that the student before presenting himself for his final examination should show that he has devoted at least one year to clinical work alone. A third way out of the difficulty would be to increase the curriculum by one more year and this, it may be said, would be an increase in name only, for the average duration of time taken by the medical student to get his entry on the Medical Register happens to be six years and one month. Against increasing the length of the curriculum there is so much to be said from the economical point that it hardly needs the saying.[2] The medical profession is now a very difficult one to enter and if the curriculum were increased to six years' duration the education of the student for his difficult career would cost at least £1000, while the majority of medical men would be 25 years old upon becoming qualified. Undoubtedly few men earn much money in practice before that time, but as the six years' curriculum would probably lead to a multiplication of examinations and a further increase in the average period of studentship above the statutory period, the General Medical Council, whatever it may feel obliged to say in debate, out of a consensus of feeling that the student must progress with the times, will probably not sanction, at any rate for some time, any extension.

The multiplication of examinations is particularly to be dreaded and this is already being foreshadowed. There are a certain number of educational authorities who would have the student's time so divided off that at the end of each year he is examined in some one series of subjects. This puts a premium on lookwork and on the employment of "coaches," and leaves the student to consider the time wasted which is spent in the out-patient department and the wards of a hospital. Ten years ago Mr. T. Pridgin Teale, who was at that time one of the Crown representatives upon the General Medical Council, called pointed attention to the danger of over-examination, and his words certainly seem now to be coming true. He suggested that the time had arrived when the General Medical Council should consider how far it could reduce the examinations of medical students in number and limit the schedule of subjects. Mr. Teale showed that during the 20 years that he had sat upon the General Medical Council the examinations had steadily increased in numbers, while he quoted manifold evidence to prove that the element of chance played too large a part in these tests, telling disastrously on some of the best, because some of the most finely organised, candidates. He based his conclusions upon statistics of various examinations as actually reported to the Council by Mr. J. C. Miller, the late registrar of the Council. Mr. Miller's figures showed that the percentage of rejections in examinations among medical students amounted to 37·1 in the primary, 47·1 in the intermediary, and 38·9 in the final. In 1876 the percentage of rejections in the final examinations only amounted to 22, the figures showing that the more examinations are multiplied the more fatal they become. This is certainly a poor result of education and would tend to show either that a good deal of the teaching received by the medical student is not much to the point or that the element of chance, that must always exist in any examination, becomes unfairly aggravated when every student has to pass a complicated series of examinations. For education and examination are not interchangeable terms; the examination is the test of the education, and if nearly half the students fail in an examination the education is demonstrably at fault.[1] Such a percentage of disaster cannot be attributed to chance or to bad material, though the influence of chance in examinations is very considerable.

One of the best things ever said about examinations in illustration of their value and their limitations occurs in a paper read by Professor Edgeworth, Professor of Political Economy at Oxford, before the Royal Statistical Society.[2] Here test examinations are compared to "the barometer, an instrument which directly measures the pressure of the atmosphere, but only inferentially, and as one sign among others, indicates that about which it is mostly consulted, the weather." The successful negotiation of an examination proves a student to have acquired some temporary knowledge and to possess some ability for exposing that knowledge; it

[1] Chapters I., II., III., IV., V., VI., VII., VIII., IX., X., XI., XII., XIII., XIV., and XV. were published in THE LANCET of Feb. 18th (p. 447) and 25th (p. 517), March 4th (p. 593), 18th (p. 736), and 25th (p. 817), April 1st (p. 877), 15th (p. 1017), 22nd (p. 1089), and 29th (p. 1151), May 6th (p. 1218), 13th (p. 1287), 20th (p. 1375), and 27th (p. 1440), June 3rd (p. 1533) and 10th (p. 1584), 1905, respectively.

[1] See an interesting extract from the columns of THE LANCET of 1827 published in THE LANCET of June 10th, p. 1583, under the heading "Looking Back."

[2] Journal of the Royal Statistical Society, 1890, vol. liii.

is only one sign among many that he has been well educated or has any real efficiency. But a well constructed barometer is a better weather guide than a bad one, and in the same way a capricious examination is less a test of permanent worth than an examination where the element of chance plays no part. There is no such rigidly perfect examination, and the question of how far the workings of chance play a part in the results of examinations must always be considered. Professor Edgeworth appraises the possibility that an error of assigned extent will be committed by a competent examiner in marking a piece of work of any given sort in a most instructive and ingenious manner. Assuming that the mean of a great number of judgments constitutes a true standard of taste—and the marking of an examiner must be a matter of taste—he shows that the same hesitation which the conscientious examiner must have in assigning marks comes over the man who is asked to estimate simple objective quantities, such as the height of an acquaintance or the number of five pound notes which will balance a sovereign. And just as by observing the estimates made by a number of persons as to the weight or height of the same body the law of error can be discovered proper to similar species of estimates, so by observing the marks given by a number of competent examiners to the same piece of work an empirical law can be ascertained the working of which may be extended to similar cases. He records a number of experiments in the marking of mathematical, classical, and historical papers and shows that there are plenty of data upon which to found assumptions as to the part played by chance in the results. Referring to examinations for the Indian Civil Service, the Home Civil Service, and the Army he finds the element of chance to be such that in any given examination the chances of displacement upon re-examination would amount to one-seventh. Judging by this figure it is clear that we must not look to chance to account for the grave number of rejections in medical examinations, but rather to the errors of the system of training, and sometimes undoubtedly to the faults of the examiners. A rejected candidate often thinks that his examiners are very silly fellows, and is often mistaken, but a study of the questions that have on some occasions been asked by examiners leads to the view that medical students have here now and again had a genuine grievance. What is the use of asking medical students in their early examinations elaborate questions as to the comparative action of drugs when they have never seen a sick man? And what is the use of asking men in a pass examination in surgery for descriptions of rare and elaborate operations? The fact that the candidates can describe, and presumably perform, all the operations that they might be called upon to carry out *in any emergency* must be elicited, but it is unnecessary to expect more of a man who has had no experience. Naturally, when in practice some grave procedure lies before him, where immediate action is not the only chance of success, he will revise his knowledge and will try to supplement it before operating; why, then, should he be rejected in an examination for not having this class of surgery at his fingers' ends?

In England, Scotland, and Ireland alike the same feeling of dissatisfaction at the examination system as applied to medical education has at different times prevailed and has found voice among some of the best known teachers, among whom may be mentioned the late Sir George Humphry, Professor Pettigrew, and the late Sir William Stokes. Sir George Humphry, one of the best clinical teachers that England has ever seen, said in a memorandum addressed to the General Medical Council upon the subject of the numerous rejections of candidates for medical examinations: "The burdening of the memory with mere facts which have no direct or obvious connexion with science or practice—with facts, that is, unassociated with ideas of practical utility—is, on the whole, of little value educationally or otherwise, and such facts make but a transient impression on the memory. Laboriously crammed together, with efforts worthy of a better purpose, they are with difficulty held until the examination crisis and then quickly escape with little regret at their departure. Indeed, examination in each subject of professional study should be restricted to the general principles and the more important facts of the science, and should be of such a character as to induce students in their preparation for it to observe and think for themselves more than is now commonly the case. The examinations should be regarded from an educational point of view, with reference, that is, to the influence which they are likely to exert upon the character, the education, and the mental training of the students, as well as with reference to their being a test of fitness for admission to the Medical Register."

Sir William Stokes, in opening the medical session at Meath Hospital in the same year that Mr. Teale made his remarkable appeal to the General Medical Council that they should guard against an abuse of examinations, gave as follows the result of his long experience as a teacher and as an examiner: "The student, wearied and weighed down by an accumulation of courses and with the sword of Damocles in the shape of an annual examination ever hanging over his head, has neither time nor inclination to do anything that, in student parlance, will not 'pay' in the examination. It seems to me that the outcome of most modern changes in the medical education is in the direction of making students read, not few books well, but many books badly, and that the brain has been looked upon too much as an organ with an unlimited capacity for retaining, digesting, and absorbing in a given time every ascertained fact, not only of medicine and surgery, but also of all the sciences auxiliary to medicine. The attempt to carry out the arrangement is fraught with real injury to many, with disaster to some."

The gist of the words of these authorities was the same. They found that the extension of the medical curriculum in 1890 had by 1895 failed in its object. The extra year had been designed to be used for clinical work in the hospitals, the student, presumably clear of bookwork, learning the practice of his profession—either "walking the hospitals," to use the old-fashioned phrase, or gaining experience otherwise in practice. So much was this the intention that the Council had sanctioned a term of pupilage at the end of the curriculum to count as part of the five years and in a measure to take the place of the old system of apprenticeship. As a matter of fact, the fifth year is almost always spent by the student with his nose in his books. Everyone sees it now and five years ago it had become clear to observant teachers. The student cannot afford the time to do clinical work or to record impressions and experiences in the ward when there is so much bookwork to be got through. The position forms a strong indictment against the habit of multiplying examinations and of splitting the subjects of the curriculum into a number of groups, and a no less strong indictment against the educational methods employed. Too much stress must not be laid upon the fallibility of examiners who in the minds of many are responsible for a part of the failure of the existing system of medical education. At some of the centres of education the examiners are chosen by the General Medical Council with great care and at all the examinations are inspected by the central authority, mainly with the object of seeing that the student obtains fair play. The arrangement by which the questions are selected is at many examination boards an elaborate one, aiming at securing a fair and commonsense test, while the student is always subjected *viva voce* to the attention of two examiners simultaneously, that there may be a witness, and possibly a supporter, in case he is rudely handled. Granted, however, that examinations are conducted with as much fairness as possible, the fact still remains that the medical student's career is too much embarrassed by them. He spends time that could be spent in a better way, learning by rote things that he believes will secure a safe passage through his next examination; he spends his parent's money trying again when previous endeavours have been futile; he spends his energies and his spirits, and when he gets through the examination he has swallowed, in the desperate intention of avoiding all possible chances of failure, lumps of information that he cannot digest.

There are two really substantial reasons for examining a medical student, or any other professional student, and these should always be held in view by those who have charge of his education. The first of these is to see that he is sufficiently well acquainted with the subjects of preliminary education to enable him with advantage to pass on to the study of the technical requirements necessary for him to practise the daily work of his profession. The second is, of course, to see that he has learned his work sufficiently well to enable him to practise with benefit to the public. With regard to the first, it is doubtful if the present guarantee in preliminary education in the medical profession is a sufficient one. The standard has been much improved in recent years but it could be raised with advantage. It is at this end that the

unfit should be stopped. The student who is bound to extend a five years' professional education into one of seven, or even more, years because his general education has been neglected should be peremptorily barred at the outset instead of being allowed to struggle on, passing his subjects piecemeal, and attacking each stage of his career with all the disabilities attending an imperfect knowledge of what he has put behind him. To turn out practical medical men is, or should be, the aim of medical education. This result is not achieved by admitting all and every to the professional examinations. From such crowding comes hurry, the ever-present element of chance is unduly increased, good men meet with undue disaster, and ineffective work is done by examinee and examiner. The remedy for a multiplicity of examinations is to start with a test of proper stringency, one which insures that the persons who would inevitably have fallen somewhere by the wayside should fall at the start, and one which also insures that the man who passes has acquired a grounding that should make future professional tests easier.

Certain subjects are given the medical student to learn and five years are given him in which to learn them theoretically and practically, after passing an entrance examination of varying stiffness. He takes on the average over six years to satisfy the examiners of the different qualifying boards that he is up to their standard, and their standard is regulated by the General Medical Council up to a certain point. The lengthening of a nominal five years' curriculum into a virtual six years' curriculum cannot be considered satisfactory—all the economical arguments against the statutory retention of the medical student in the pupillary state for six years can be employed with double force against a condition of things which retains him there by providing him with no proper chances of getting through his work in the allotted spell. But the direction in which to look for a remedy is not so clear as is the necessity of looking. To lower the standard of medical knowledge at a time when all around the standard of other professional knowledge is being raised would be quite unthinkable. To multiply examinations so that the student can take his subjects in many small parts and put them behind him bit by bit is a vicious plan—the percentage of failures is actually increased thereby and a premium is put upon unintelligent cramming. It has been suggested by Mr. Teale and others that the different medical schools should examine their own students in the ancillary sciences. "We must decentralise," he said, in the address from which I have already quoted; "we must unload our public examinations. We must relegate to the schools not only to teach but to examine and to certify in all secondary subjects, such as elementary biology, materia medica, pharmacy, hygiene, perhaps even chemistry, and certainly forensic medicine. Then let *all the rest* be covered by three public examinations—one in anatomy and physiology, presumably at the end of the second year of professional study; one in pathology and therapeutics at the end of the fourth year; and the clinical examination in medicine and surgery, together with the examination in midwifery (truly in midwifery, not in fancy gynæcology), at the end of the fifth year. The licensing bodies will be able to afford to examine more thoroughly and less hurriedly, to find out what a student really knows, and to re-examine those on the border line of pluck or pass. Then, when plucking examinations are reduced from nine to three and become less matters of chance, there will be some room for calm clinical study, for self-training, for learning something during studentship of that very important and terribly neglected better half of the training of a true medical man, the knowledge and observation of the human being."

Mr. Teale's indictment of over-examination was thoroughly sound and justified by facts, but his remedy is not convincing. To permit the different medical schools to examine and pass their students in the preliminary subjects would be to court incalculable trouble, for the stress of circumstances might at any time lead to a down-grade competition between the schools. The General Medical Council could never resign to all the medical schools between Belfast and London, between Aberdeen and Bristol, so much of its discretion and authority as would be implied by allowing the schools to examine their own students in half the subjects of a medical curriculum. Centralisation rather than decentralisation is the remedy.

First, it is necessary to secure a sound preliminary education for the medical student, as a certain percentage of rejections certainly come from the fact that a large number of candidates have not been taught how to learn. Here the General Medical Council might well insist upon more stringent tests than are yet employed, while it is greatly to be hoped that all the lads in the kingdom intending to enter a profession will soon be submitted to one form of test before entering upon their special studies. As has been recently pointed out in the columns of THE LANCET,[4] it is a fact familiar to all who have entered professions and more painfully, perhaps, to those who have desired to place sons in them, that there is a multiplicity of examinations which qualify for entrance. Many bodies hold examinations of this kind which, although identical in standard, are yet altogether diverse in the details of their requirements. The effects of this diversity are serious not only to schools by rendering it impossible for boys working for the different examinations to be taught together but also to the education of the boys preparing for the examinations by depriving them of the regular class instruction during their preparation. It would therefore be a great gain if there were a recognised standard examination the exact requirements for which could be taught in schools all over the country and the successful passing of which would qualify a boy in the eyes of such bodies as the General Medical Council, the Institution of Civil Engineers, and so on, to enter upon the particular studies required by the examining bodies for the different professions. The Board of Education, through a consultative committee, has recently proposed to inaugurate such a scheme and in doing so has been assisted in its efforts by the General Medical Council. The consultative committee of the Board of Education considers that the general system of school certificates which is desirable should be granted upon examinations controlled "by a university, by a combination of universities, or by an examining board representative of a university or universities and of the local bodies prepared to coöperate with them." The more generally representative this authority is made the better will it serve the purpose of the medical profession. If practically all medical students enter upon their special studies after passing the same preliminary examination, and that one of proper stringency, the teaching in classes corresponding to years of entry would be much easier, and the percentage of rejections would fall at once considerably. The examination of medical men by the State for a State licence to practise is not a revolution that is outside the range of practical politics, but such a reform—for reform I hold that it would be even now, though all the circumstances are altered since THE LANCET first started a powerful movement in this direction—will take time to accomplish.

Centralisation of medical education as far as the provision of an adequate entrance examination for all candidates would be a thoroughly useful reform. Centralisation again as implied for common classes of instruction for London medical students is very desirable. But when centralisation comes to be taken as far as the institution of a State examination for a State licence to practise, opinion is not so solid in its favour. For the pressing trouble some immediate relief should be found and it will consist in lightening the curriculum wherever possible without lowering the professional standard. If the curriculum cannot be lengthened upon economical grounds, if the standard cannot be lowered for equally cogent reasons, and if a multiplicity of examinations appears to mean simply an increased percentage of failures, but one course is left open. The curriculum must be weeded. Without in the least lowering the standard of knowledge demanded of the student upon essential points and without relaxing any effort to make his knowledge of the more important subjects sound all that is not absolutely necessary in the secondary subjects should be excised from the schedule. The amount of botany demanded of the student might be decreased and schedules should limit the study of chemistry and biology in certain directions so that teaching could be employed directly upon the lines indicated. Outside these lines examiners should be instructed to attribute the greatest importance to practical work. In this way, given a sensible preliminary examination, all students of good capacity should be able to obtain their qualifications in five years, and students not so favourably dowered had better try another walk of life.

(To be continued.)

[4] THE LANCET, Dec. 10th, 1904, p. 1666.

THE LANCET.

LONDON: SATURDAY, JUNE 17, 1905.

The Metropolitan Hospital Sunday Fund.

THIS is the one occasion in the whole year when we address the public directly and every year, when we do so, we say the same thing—that the Metropolitan Hospital Sunday Fund and its sister institution, King Edward's Hospital Fund for London, are, of all the charities which have ever been devised, the most fitting for general public support. They have the greatest right to expect an enthusiastic backing from those who understand their objects, and they appeal alike to the rich and the poor, to the virtuous and the frail, to the sick and the sound. Nor is there any difficulty in understanding the aim of these funds; they desire to introduce order into charity, to support those noble institutions, the London hospitals, in an openhanded but economical manner by dowering what is best in them and by assisting them to deal in a well-regulated fashion with the awkward problems of hospital administration.

We find typified in these funds the working of charity combined with organisation, two things which—despite the excellent record of the society which is inevitably called to mind by the conjunction of the words—most would think to be in complete antagonism to each other. Charity, the charity of the Epistle signifies love and cannot, many will be found to say, be confined by rules. Love knows nothing of rules, and it cannot be truly charitable to give so much money to one cause and so much to another, and to have reasons for not giving so much more money to yet a third. Generosity of spirit goes on to suggest that it is not truly charitable to wonder whether the object of our ministrations is a worthy object. It may be that unworthiness constitutes the most essential part of the claim upon our purse and our attention. It is just because the hospitals of London are administered in this spirit that no one need ever hesitate about subscribing to their support, and the Metropolitan Hospital Sunday Fund, the subject of these reflections, true to the religious tone which underlies it and pervades it, desires no regulations whatever tending to confine the benefits of the hospitals to so-called deserving persons. The order that it desires to introduce into charity implies merely the business principles of administration, and this because the good work of the hospitals can be enormously increased if the available funds are spent in a proper manner—in a manner conformable with the theory that a hospital is a charitable institution for the relief of the sick and injured poor and is not a rate-supported infirmary or a centre for the *cliniques* of distinguished medical men, or a convalescent home. Regarding the matter in this way we see that a certain amount of order in charity is necessary or the uses of the charity may be curtailed, though the necessity may be due to the imperfection of this world—a world of compromises where continually the best has to be done in unpromising circumstances and by imperfect methods. There is not a system of religion which has been devised which does not find war wicked and stupid, but, on the other hand, there is not a system of government which has been devised that does not find recourse to arms in behalf of the right a necessity. In the same way if this were Utopia no order in charity would be required because the supply of charity would exceed the demand and the struggle would be not to obtain support for this or that good object but to be the first to subscribe to this or that good object. When this position is achieved, when the supply of practical charity equals the demand, the necessity for economy will be gone, but until that day arrives it seems to us that every effort will have to be made by practical lovers of their fellow-men not only to raise funds for charity but to husband them, so that they may be employed only to the best advantage and only in behalf of those for whom they were intended.

At the present time all civilised nations have upon their hands a number of poor, of used-up, of incompetent, and of criminal persons, for whom assistance has to be found in sickness and in health, and especially in sickness. In their behalf charity should always be active but for their relief only inadequate means can as yet be found. Selection must therefore be made among the many claimants for our charity, and the moment the principle of selection is put into play the person who is poor and sick at the same time is seen to be by far the most urgent candidate for protection. Timely ministry to his physical needs may restore him to society as a useful and valuable citizen. His plight is in most cases due to no fault of his own, while his sufferings are accentuated by the fact that only too often all his family have to suffer with him; and not to suffer in their feelings only. The sick parent may mean the hungry child and the ruined home, unless the breadwinner can be promptly restored to health. There is little need to elaborate the points that have been thus briefly set down and which will serve, like the Rev. C. H. GRUNDY'S practical little homily, which we publish in another column, to elaborate the message of our usual Hospital Sunday Fund Supplement. That Supplement will be in the hands of a large section of the public by next Sunday and it is our earnest hope that it may arouse in some of them the desire to make the Fund a success. Through Mr. GEORGE HERRING'S noble generosity every pound given to the Fund automatically becomes 25*s*., while his decision to rank the City of London as a place of worship within the meaning of his benevolent act increases the liability upon him. We trust that we may have in subsequent issues of THE LANCET to chronicle a splendid list of subscriptions, and that the total may this year attain to the coveted figure of £100,000, the sum which imagination, for no very good reason, appears to fix as the maximum to which it can attain.

Vicarious Excretion.

ONE of the most remarkable facts in connexion with the physiology of the animal body is the power by which the function of one organ can be performed by another. In the lowest organisms this power is most marked. The hydra consists for the most part of two layers of cells, the superficial layer serving as a cutaneous envelope while the deeper layer incloses the primitive alimentary canal and performs digestive functions. By the use of extreme care it is possible to turn the hydra inside out, so that the lower formerly digestive inner layer now is superficial and serves to protect the animal, while the former cutaneous layer surrounds the new digestive cavity and, what is more, it secretes a digestive liquid which, acting on the food, suffices for the nourishment of the hydra. Such exchange of functions is not very surprising in so low a creature, for the cells in the hydra are not very far removed from the unicellular amœba, where the same mass of protoplasm can undertake in turn, or even simultaneously, the most varied functions. As we ascend the animal scale the actions of cells become more differentiated and with the increase of differentiation there is diminution of the power of undertaking many functions in turn. The cells become specialised and have to sacrifice a number of their powers in order to attain to greater perfection in the remainder. Yet even in the higher animals we find evidence that the same function can be exercised by more than one organ. A dog from which the spleen has been removed may be as healthy and as normal as a dog provided with a spleen, and though we may not be fully acquainted with the functions of this organ yet from the well-being of the animal after splenectomy we may be assured that the functions of the spleen are being exercised by some other organ or organs. In some cases it is possible that there have been accessory spleens (lienculi) which have hypertrophied and thus replaced the organ which had been removed; but this explanation will not suffice for all cases, for necropsies have in some instances shown that there have been none of these accessory spleens present.

Exactly the same observations have been made on human beings. Many times the spleen has been successfully removed, especially after injury, and yet by no symptom could it have been diagnosed that the spleen was not there. The functions of the spleen have been undertaken by some other tissues or organs. When one kidney has been removed the other undergoes a true vicarious hypertrophy, growing obviously larger and becoming capable of fulfilling completely the duties of its lost fellow in addition to its own. These well-known facts perhaps prompted Mr. F. ROWLAND HUMPHREYS in the choice of the subject of his oration at the annual meeting of the Hunterian Society. For he discoursed in an interesting address on the Vicarious Excretion in Bright's Disease. The excretory function of the kidney is of the first importance and Mr. HUMPHREYS'S paper was in the main an examination of the question as to how far other organs are capable of undertaking the functions of the kidney when it is diseased. The skin and the bowel are the organs which can endeavour to replace the kidney but the extent to which the skin does so is much exaggerated in common opinion. In health the skin does excrete some urea and other nitrogenous products; it is true that the quantity is small but in health the skin does not appear to replace the kidney at all, for, according to LEUBE, the nitrogen of the sweat is greatest in amount when it is greatest in the urine. In disease, however, it has been found that with small urinary excretion of urea the skin may excrete a greatly increased amount; in some cases it would appear that the epithelial cells are capable of allowing the passage of nitrogenous matter by dialysis in proportion to their loss of vitality.

Mr. HUMPHREYS suggests that it might be possible to make use of an artificial diminution of vitality in the epithelium to increase its dialysing powers. The bowel has only recently received full recognition as an excreting agent of nitrogenous matters, for KRUGER and SCHITTENHELM have shown that even in health four times as much of those substances classed as purin bodies pass out by the bowel as are excreted by the kidneys. It is also true of many other substances that excretion by the bowel is by no means negligible and in disease the value of the intestinal excretion may be greater still. Mr. HUMPHREYS points out that if sodium and magnesium salts are administered in Bright's disease in order to carry off some of the accumulated toxins a large amount of the salts passes into the blood and this will induce by osmosis the passage of a large amount of tissue waste and toxins from the tissues, and as the kidneys are incapable of dealing with even the normal quantity of such substances they will set up a toxic condition. The subject of vicarious excretion, whether considered only in connexion with Bright's disease or not, is extremely complex; the chemical and physiological problems are far more elaborate than used to be thought and our increasing knowledge has hitherto only served to show how little we know. We know that the vicarious action of the skin and the bowel in renal disease is of vast importance and really that is about all that we do know. But astute theoretical and pathological surmises are all the more welcome because at present an exact knowledge is small. The practical chemist and the observant clinician can keep the theorist from obtaining a hearing for theories only, while they are the first to allow that imagination has ever played a great part in the discovery of the truth.

Glanders in London and Elsewhere.

A QUESTION of considerable importance was addressed by Mr. F. A. CHANNING to the President of the Board of Agriculture in the House of Commons on May 31st, in reference to the circumstances disclosed at the recent inquest on a fatal case of acute glanders in man. The case illustrates the danger of the spread of the disease from infected horses to man and the difficulty of diagnosis of the human cases. The deceased was a horsekeeper in the employ of the Andrew Star Omnibus Company at Fulham, in whose stables cases of glanders have occurred from time to time. He complained of pain in the left side and was feverish on May 1st and his condition was regarded as due to pleurisy. Two days later he was sweating profusely and complained of pain in various joints. On admission to St. George's Hospital on May 8th

he was delirious and had a high temperature and was again sweating profusely. He was treated at first for rheumatic fever but shortly after admission pustules developed on the face, the wrists, and the left ankle, and the glands in the neck became enlarged and the condition was regarded as septicæmic in nature. On the day before death, which occurred on May 15th, it was suspected that the case might be one of glanders and cultures were taken which subsequently proved to be characteristic of the bacillus mallei. Professor HOBDAY, F.R.C.V.S., one of the inspectors to the London County Council, who is dealing with the outbreak of glanders at the Star Omnibus Company's premises, has made known the measures adopted at the inquest on the fatal case. Three clinically glandered animals were at once condemned and the mallein test was applied to 11 other horses, of which seven proved to be infected with glanders and were condemned to be destroyed. Professor HOBDAY pointed out the insidious character of the disease in the horse and its apparent latency in some cases, although such animals were infective to others. The coroner's jury returning a verdict of death from glanders added a recommendation that "veterinary inspectors ought to have the power to compel the owners of horses to have the mallein test applied to suspected animals," a recommendation which was endorsed by the coroner, Mr. TROUTBECK, who stated that if the test were compulsory the disease would soon be stamped out both in man and in the horse.

Mr. AILWYN FELLOWES, in his reply in the House of Commons to Mr. CHANNING'S question, admitted the desirability of amending the Glanders Order in the direction of making the use of the mallein test compulsory, but said that there were difficulties, both administrative and financial, in the way. He stated that inquiries were being instituted with a view to decide whether any action could be taken in the direction of controlling the importation of horses into this country. The *Veterinary Journal*, in commenting on the inquest on the above case, cordially approved of the recommendation of the jury in reference to the compulsory application of the mallein test and stated that glanders is undoubtedly on the increase in London but that rigorous measures, if adopted, would soon stamp out the disease. Although "the expense at first, especially in London, would be very great if a reasonable compensation was given," the *Veterinary Journal* considers that "taken on an average it would be found to pay the country and horse-owners over and over again, rather than allow the disease to go on devastating our studs as at the present time." The danger of communication to man is, however, the most urgent reason for stamping out the disease. It is believed that man is almost as susceptible to the disease as is the horse, and it is known that infection may take place from the discharge projected by the snorting of glandered horses, so that the danger of infection is not necessarily limited to those engaged in tending horses. Twelve cases of human glanders have been reported to the London County Council during the last five years and it is more than doubtful if this number represents the total, since the disease in man is admittedly difficult to diagnose and cases are very liable to be attributed to other causes. In one hospital alone in London no less than seven cases have been diagnosed in man during the past two years and all terminated fatally. It is now well known and generally accepted by the veterinary profession that by the injection of mallein an expert can tell within 24, or at most 48, hours whether a horse is glandered or not, and we certainly consider that the mallein test should be applied to those animals which have been in contact with the disease. Glanders is a preventable plague and where it is a mere matter of considering money as against human life expense ought not to be taken into account. Horse owners would, no doubt, be up in arms against any scheme which did not allow them a fair compensation for animals which were not diseased, but we are sure that although the cost to the State might be great during the first two or three years the proceeding would be an economy in the end.

The testing of all imported horses at the port of landing should be insisted upon; it would be useless to stamp the disease out and not to provide the necessary restrictions which would keep it out. In the outbreak in the stud of the Star Omnibus Company we learn that a group of 16 Australian horses, young animals which had never been shod or even broken in, had been purchased in January last. These were in stalls in the same stable where the horsekeeper who died had been regularly at work and out of this lot no less than 12 have since been killed as suffering from glanders, the necropsy in each case confirming the diagnosis. These horses had only been in England four or five months and as they were all stabled and worked together it seems fair to surmise that they were probably infected when purchased. Glanders is rife in all European countries and also in America, and the horse supply of England is mainly kept up from these sources. It is a disease practically confined to equines and when it occurs in man its source is almost always traced to contact with a glandered horse. It could be stamped out and the perfectly obvious steps ought to be taken without further delay to attain this end.

Annotations.

"Ne quid nimis."

HOW TO LIVE.

THE prevalence of physical degeneration—which would be one of the most disquieting features of modern life if it were necessary to take the too common but unwarranted pessimistic view—has been ascribed to many causes. The gradual abandonment of outdoor agricultural for indoor industrial pursuits with the attendant herding of large masses of population into overcrowded towns is generally recognised as a prime factor. Inspection of factories and the increased attention paid to house sanitation have done much to ameliorate the condition of the workers, but legislative measures alone are not sufficient. Hygienic reform must depend for its success not on the mere multiplication of by-laws but on the education of the great masses of the people in the elementary laws of health. Even in the most recent of "model dwellings" it is too often found that the inmates live in a state of dirt and squalor little better than in their old surroundings. For choice of tenantry cannot, and should not, be made too rigid, but those

who are accustomed, in many cases since infancy, to overcrowding, poverty, and neglect of body and mind acquire corresponding habits of life which are ineradicable and which will be followed by their offspring unless precautions are taken. It is necessary that the children, who can be reached far more easily than the parents, should be well instructed in proper habits of living and the care of their health otherwise much of the benefit of modern sanitary legislation will be lost. The State, which has adopted the principle of compulsory education, is beginning to recognise that the physical development of the children demands attention as well as their mental development—a view which has persistently been urged by THE LANCET. The simple rules of health, therefore, should be taught to the children as a subject of primary importance, neglect of which may entail life-long suffering. With this object a manual has lately been written by Dr. R. Caton of Liverpool entitled "How to Live" (price 3*d*.). It is intended for the use of older pupils in primary schools and describes in the simplest language the structure and the needs of the human body, while pointing out the hygienic faults to which that body is generally subjected. The importance of fresh air and the need for thorough ventilation are well emphasised. It is needless to remind medical men of the vitiated atmosphere which they have been obliged to inhale on many occasions when visiting their poorer patients, but such conditions are not realised so fully by the laity. The close room with flaring gas or smoking lamp, filled with mingled fumes of cooking and tobacco, not to particularise other emanations, is nauseating to a degree and makes a poisonous sleeping chamber. The frequency of headaches and respiratory disorders may be largely attributed to bad ventilation. In spite of overcrowding and notwithstanding the structural defects of many of the tenements where the poor live open windows and cleanliness make a marvellous difference to the air of the rooms and this cannot be too strongly impressed on the young. With regard to the question of diet a clear distinction is drawn by Dr. Caton for the information of his young readers between food and mere stimulants. Many women regard a cup of tea as a sufficient meal, while milk is looked on as a mere diluent. The child who studies Dr. Caton's manual will be able to correct his or her grandmother on this point, and we hope that she—it will probably be a girl pupil—will do so respectfully. Other matters of health, such as nasal respiration, care of the teeth, and so on, receive attention, and the whole is comprised in a most useful little pamphlet of 42 pages printed in large clear type. With increasing knowledge of the laws that govern the body and preserve health we may confidently expect on the part of those taught more rational ideas of disease and its treatment to prevail. At present the appalling ignorance of the masses (and of many educated people too) on these matters leads, on the one hand, to dangerous delays and, on the other, to unreasoning terrors which render them an easy prey to the unscrupulous quack. The child who has mastered Dr. Caton's precepts should not only escape many of the evils of an insanitary environment, but should become the prophet of hygiene in his or her home and in time of sickness should prove an intelligent patient.

A "SENSE OF TRAFFIC."

THE number of street and road accidents, already appalling enough, may be expected to increase with the ever-increasing amount of traffic and speed of locomotion. A certain proportion of these accidents are no doubt the inevitable accompaniment of human infirmities. The blind man and the deaf person will meet with accidents in the public way, no matter how great the care exercised by all other individuals. It is not, therefore, in the hope of reducing this probably irreducible minimum that these few lines are written but because we believe that attention may profitably be directed to the importance of cultivating what we may call a "sense of traffic." By the possession of such a sense the individual almost instinctively avoids danger. He hears and sees approaching vehicles without consciously employing his eyes or his ears. Without thinking he looks both to the right and to the left before he crosses a road and does not step off the kerbstone before his course is safe before him. It is the absence of a "sense of traffic" that leaves ladies fluttering half way across a road and the possession of the "sense of traffic" that allows the city man to wander apparently unconcerned among the turmoil of traffic at the Mansion House or Ludgate-circus. Every town dweller should cultivate his "sense of traffic." At first this means that he will take every step in a crowded thoroughfare with a reasoned consciousness. He will never think of his business or his pleasure while he is in the street but only of the way in which he is going, of what is before him, of what is on either side of him, and of what he is leaving behind him. At every crossing he will settle his course, so to speak, and look out for dangers from every point of the compass. After very few weeks of this careful self-regulation he will develop the "sense of traffic." Without knowing it he will see and hear and realise all that moves about him. He will automatically avoid collision and it will be as impossible for him to take a step at the wrong time as it was formerly difficult for him to take it at the right one. He will at the same time preserve his person and lighten the labours of the policeman. The street accidents of London occur to those who have no "sense of traffic"; it is important for the public weal that every citizen should realise the potential faculty within him and not rest satisfied until it is cultivated to a high degree. Led by the hand of a parent who has the "sense of traffic" the young child can be taught to develop the quality for himself. The child will no longer be a danger to the driver, the motorist, the cyclist, and himself, and the woman crossing a city thoroughfare will avoid the palpitations of her own heart and the anxious terror that she now too often strikes in the hearts of her beholders.

THE CORONERS' SOCIETY.

THE annual meeting of the Coroners' Society was held on June 7th, when most of the London coroners and representatives from all parts of England and Wales attended. Mr. Henry White (coroner for Winchester), the President, occupied the chair and the report, which embraced a variety of subjects, was adopted after an interesting discussion on the desirability of a special robe for coroners. Mr. Butcher (coroner for Bury) was unanimously elected President for the ensuing year and on taking office presented Mr. White with a framed illuminated vote of thanks on behalf of the society for his services as President during the past two years. In the evening the annual banquet was held at the Holborn Restaurant at which Mr. Butcher presided, supported by some 60 members and guests, including, in addition to those who spoke, Mr. Shillitoe, Mr. Simpson of the Home Office, Mr. A. MacMorran, K.C., and Dr. R. M. Beaton, L.C.C. After the customary loyal toasts had been honoured Mr. Rothera (Nottingham), Vice-President, proposed the toast of "Imperial and Local Government," for which Mr. Cameron, M.P., and Mr. Toulmin, M.P., replied on behalf of Parliament; and in an able speech Sir William Collins, L.C.C., President of the Medico-legal Society, responded for municipal institutions. Mr. White proposed the health of the guests and interesting speeches in reply were delivered by the President of the Incorporated Law Society (Mr. Rawle), the President of the British Medical

Association (Dr. W. Collier), and Mr. Plowden, the well-known police magistrate. The toasts of "The Coroners' Society," given by Mr. T. H. Openshaw, C.M.G., F.R.C.S., and responded to by Mr. Butcher in an interesting speech, and "The Officers" were duly pledged, the President eulogising the honorary secretary, Mr. Walter Schröder, for his invaluable assistance to the council and to the many members who wrote to him for his opinion in cases of emergency and difficulty. Mr. G. P. Wyatt and Mr. Schröder replied. The Arcadian glee singers gave a very good musical programme and a most agreeable evening was spent, the company dispersing about 11 P.M.

THE METHODS OF DISTRIBUTION OF ICE.

THE approach of warmer weather calls attention to the unsatisfactory methods under which ice is distributed in this country. The purity of ice has frequently been referred to in THE LANCET. Everyone is familiar with the method of handling huge blocks of ice from an open lorry to, as is usually the case, an underground cellar. A sack, more often than not filthy by constant dragging along the pavement on which it is placed, is used not so much to keep the ice clean as to break the fall. The blocks of ice are lowered down a ladder or board to the sacking. The ice is then pushed along the pavement to its destination, either a shed at the back of the premises or a cellar. This method of handling ice may be seen every day in any large town. Huge quantities of ice are used nowadays, especially by butchers and fishmongers, in hotels and restaurants, and for the preparation of "ices" and iced drinks. Bacterial contamination due to ice is bad enough in the case of meat and fish, though the cooking of these foods probably destroys the micro-organisms. In the case of "ices" and iced drinks, however, any bacteria introduced by impure ice remain unaffected until they reach the mouth and alimentary tract of the consumer where their activity may be aroused. It is therefore of the highest importance that care should be taken not only to obtain ice from pure sources but to maintain it by all possible means in a state of purity. As to the source of ice, there can be no doubt that the purest ice is obtainable from pure water that has been boiled, cooled, and then artificially frozen, but on the whole the natural ice obtained from the Norwegian fields is excellent in quality and any superficial impurity can easily be removed by rinsing. But the use of stout wooden tubs fitted with linings of pure tin and mounted on runners would form a distinct advance on the rude method of its distribution at present in vogue.

THE NECESSITY OF ATTENDING TO AURAL DISCHARGES.

PERSISTENT discharge from the ear has not until comparatively recent years been recognised in its true significance by the profession and it is only amongst the more cultured and intelligent of the laity that any real appreciation of its potential dangers exists. The reasons for this are not hard to find, for although Sir William Wilde, the famous Irish aural surgeon, in 1840 pointed out the dangers accruing from neglected aural discharge, yet unfortunately his words did not make a due impression upon the medical profession. Wilde lamented the fact that it was considered dangerous to check the discharge of otorrhœa as being a fruitful source of trouble but we find that this idea persists even now amongst the public, while until recently many practitioners of medicine failed to see the possible dangers implied in an aural discharge. An aural discharge frequently ceases at the onset of intracranial complications, so that the symptom no longer exists just as the seriousness of the condition becomes manifest. Another circumstance which has rendered the laity blind to the dangers of otorrhœa and slow to seek medical advice is that the patient frequently gets well without treatment. This is the origin of the belief that a child "will grow out of the discharge." The by no means infrequent cases of spontaneous cure have also had another result—quacks have seen in ear diseases a likely malady for cultivation. Quacks, in fact, at all times have reaped a rich harvest from the "treatment" of aural diseases, and in England we have witnessed the immense scale upon which the Drouet Institute, assisted by a complacent press, conducted its operations. Even the Drouet Institute, however, hardly achieved the superlative wickedness of a French aurist who killed a large number of people by filling their ears with plaster of Paris in order to "cure the discharge." We have read that this person "received the deserts" but we cannot believe it—the age is too humanitarian. To return, however, to the undoubted neglect of aural disease by medical men in times gone by, the scanty attention given to the teaching of the subject has been responsible in this country for the disregard of aural discharges. We are awake now in the matter and there is one important fact also which has worked in a very practical way for the due recognition by the lay mind of the latent dangers of otorrhœa. This is the fact that life assurance companies with but few exceptions are now declining lives where this condition exists. The public can appreciate the significance of this and see that it means a simple assertion that a discharge of the ear is a danger to life. Careful and skilled attention is necessary for the treatment of these conditions, but this skill and care are no more beyond the range and abilities of the averagely endowed practitioner than are the necessities of midwifery. Happen what will, a large proportion of cases will require operation, either a minor operation, such as removing the ossicles with the remains of the drum, or the more extensive radical operation. Both these are extremely satisfactory in skilled hands and the former finds its chief use in soon enabling the busy man to resume his labours. But it cannot be too firmly impressed on sufferers from suppurative otitis media or those responsible for the well-being of such persons that a chronic otorrhœa is a constant danger.

DANGEROUS PERFORMANCES.

AT Hastings, on the Saturday before the recent bank holiday, a man named Davidson gave an exhibition at a public recreation ground, consisting in balancing feats of a not unfamiliar character, executed on a rope or cable stretched 40 feet above the ground. In the midst of his performance the pole with the help of which he was maintaining his equilibrium slipped from him and as he failed in an attempt to grasp the rope he fell to the ground and was killed. A large crowd had assembled to see him and some of these, no doubt, went home sobered and saddened by the catastrophe. At the same time, of others of those present it must be said that they were influenced to a large extent by a morbid desire to see a dangerous performance and on this occasion the dangerous element produced a fatal result before their eyes. Tight-rope performances are not particularly attractive in themselves and if Davidson had advertised his feats as about to take place three feet above the ground or as rendered perfectly safe by means of a net he would have been without an audience, although the skill exhibited would have been the same. Some of those who flock to exhibitions such as his may say in their own defence that it is the exhibition of courage displayed by the performer that they go to see but they must be perfectly aware that the performance is to the chief actor in it a work of routine

and that he has long ago lost the nervous feeling which affects some of us when we look down from what is known as a "giddy height." Davidson was no more likely to be affected by the fact that he was 40 feet above the ground than an ordinary person is alarmed when he looks out of a second-floor window. Nor was his loss of the pole in any way due to it. The element of danger, however, was necessary in order that he might be able to attract a crowd and so to earn his living and he pursued his calling to its fatal end. The *Daily Telegraph*, in an interesting note appended to the report of his death, reminds us of some of his more famous predecessors in this particular form of exhibition. Of these, Mademoiselle Saqui lived to be 80 years old, dying in 1866, and Blondin, who also died "in his bed" in 1897, was 73 years of age. Many others whose names are not chronicled have perished in attempting to attain the skill necessary to become renowned public performers, but our contemporary mentions two women, Miss Young, who died a cripple from injuries sustained at a public performance, and the "Female Blondin" who was killed on the Aston Park recreation ground at Birmingham in August, 1863. It was on this occasion that Her late Majesty Queen Victoria evinced that sympathy with her subjects which always distinguished her, combined with the sterling good sense no less conspicuous in her character, for she wrote to the Mayor of Birmingham expressing her horror that one of her subjects, and a woman, should have been "sacrificed to the gratification of a demoralising taste" in a public playground which she and the Prince Consort had opened in the hope that it might be for "the healthy exercise and rational recreation of the people." As a matter of fact, the ground in question was outside the jurisdiction of the official to whom Her Majesty's letter was addressed and the stopping of a performance of a grown-up person on the score of danger is not easy to effect. The best safeguard for the performer is in a healthy public opinion when it can be roused; and of performances upon the tight or slack wire it may also be said that they are so dull and monotonous, even with the element of danger, that their season of popularity, at its height in the days of Blondin, has long been over.

THE PROPER WAY TO EAT.

THE two articles which we published[1] dealing with the manner in which swallowing is effected by the human being touch on a subject of constant interest and importance. Dietetics and all that relates thereto form a branch of medical science that appeals to the general mind as perhaps no other branch can hope to do. Every man, be he gourmand or ascetic, must eat to live, and to the one, even as much as to the other, there is an interest and an importance about the details of the way in which this feeding process is accomplished that few other natural processes entail to an equal extent. Whether because he wishes to get the largest amount of pleasure at a minimum risk of dyspepsia in the case of the gourmand, or because he wishes to get a maximum amount of nutrition with a minimum expenditure of time and energy, as with the ascetic, man in either case wishes to know how he eats, what becomes of his food, and why these things are just as they are and not otherwise. Mr. Hubert Higgins has opened up an interesting side of the question in his discussion of the poltophagic and psomophagic capabilities of mankind. He has shown how both anatomically and functionally man can choose at will which method of swallowing he will employ and we believe with Mr. Higgins that much would be gained if all could resolve upon, and adhere to, the more troublesome but more hygienic method. No medical man doubts that if all his patients took longer over the mastication and insalivation of their food his labours in safeguarding their bodily health would be lightened in a large degree. Unfortunately, the constant tendency of civilisation and of social arrangements is to minimise the time given to mastication and to insalivation. The cook and the conversationalist are allied against mastication. The one prepares food that hardly calls for mastication and that offers little or no resistance to the grindings of the teeth, the other employs his art to stimulate movements of the tongue entirely unconcerned with the preparation for deglutition of food. A man cannot in polite circles at once talk and eat. Whereas dinner time should be devoted to eating we constantly sacrifice the precious moments to speech and risk a dyspepsia rather than fail to let loose a *bon mot*. The labours of Mr. Horace Fletcher and of Mr. E. H. van Someren may effect a permanent change in our table customs. Perhaps we shall see started a "society for the propagation of poltophagy" and shall recognise its adherents when we see a silent but healthy-looking dinner party of quietly-chewing folk. We do not maintain that the more spiritual side of conviviality will be enhanced but there can be no question of the desirability of chewing or poltophagy from a purely physical and gastronomic aspect.

[1] THE LANCET, May 20th (p. 1334) and 27th (p. 1417), 1905.

VACCINATION: THE DURATION OF IMMUNITY.

AT the meeting of the Société Médicale des Hôpitaux of Paris on May 5th M. Sevestre brought forward some evidence showing that the duration of the immunity after vaccination is shorter than is generally supposed. A child, aged three years, was admitted to the measles pavilion of the Bretonneau Hospital with an eruption which was supposed to be of that disease but which turned out to be a prodromal rash of variola. All the patients in the pavilion, who numbered 27, were immediately vaccinated. Three left two days later before the result of the vaccination could be ascertained. Of the 24 others, two, aged 11 and 13 years, showed two and three well-developed vaccination vesicles respectively. The former child had no vaccination scar and the latter had been unsuccessfully vaccinated in infancy. In addition well-developed vesicles were obtained in two children who had well-marked vaccination scars and whose ages were two and four years respectively. The child who suffered from variola was only three years old and showed one vaccination cicatrix. Thus out of the 25 children one, who showed a vaccination scar, was attacked with variola at the age of three years and in two others, aged two and four years respectively, vaccination was successfully performed in spite of the existence of well-marked vaccination scars. M. Sevestre, therefore, concludes that in the case of an epidemic of variola or of exposure to infection from a sporadic case children should be vaccinated, even those only a few years old and showing well-marked vaccination scars. In the discussion that followed cases were mentioned in which recruits were successfully vaccinated, although the same result had been achieved a short time before. M. Roger stated that he had successfully vaccinated in 1897 six children at ages varying from 16 months to five years who bore the scars, sometimes multiple, of primary vaccination. M. Joseph Belin mentioned the case of a woman who was successfully vaccinated in infancy and had confluent variola in 1868 at the age of 28 years. In 1870 she had discrete variola. From 1871 to 1881 Professor Brouardel vaccinated her every year successfully. The allied but distinct question of the duration of the protection against variola conferred by vaccination does not seem to have engaged the attention of the society. We may point out that the Registrar-General's statistics of the small-pox epidemic in London in 1901-02 showed

that vaccination affords complete protection against death from small-pox for ten years. But all practitioners will agree as to the wisdom of the advice to revaccinate even young children who have been successfully vaccinated if they are exposed to the infection of variola. Exceptional cases occur and it is by representing them as the rule that a large part of the antivaccinationist propaganda is carried on. It is noteworthy that the child referred to above who had variola showed only one vaccination scar and therefore was imperfectly vaccinated.

THE NEUROLOGICAL SOCIETY OF THE UNITED KINGDOM.

A MEETING of the Neurological Society of the United Kingdom will be held at the National Hospital for the Paralysed and Epileptic, Queen-square, London, W.C., on Saturday, June 24th, at 10 A.M. The morning will be devoted to the exhibition and the discussion of clinical cases and the afternoon to pathological demonstrations. Lunch will be provided for all members of the Neurological Society at the Hotel Russell. In the evening the metropolitan members will entertain the extra-metropolitan members at dinner at the Imperial Restaurant, Regent-street, at 7.45.

A PLEA FOR THE SUPPLY OF NATURAL MILK.

WE should be wrong probably in saying that there was not a pint of milk sold in London exactly as it comes from the cow, but we should not be far out if we said that at least, and probably more than, nine-tenths of the supply is not in its perfectly pure, natural condition. When it is not watered it is deprived of part of its fat or preserved with a chemical substance. The law provides a remedy against these forms of tampering and offenders are frequently brought to book, but no attempt appears to be made to check the enormously increasing practice of adding a dye to milk to make it look rich and creamy. Surely the phrase "to make it look rich and creamy" implies deceit and fraud. At all events, no milk can be called natural that contains an added dye. The fact is that the eye is trusted too much by the public nowadays as a guide to quality and the unscrupulous tradesman is not slow to take advantage of the adoption of this frequently false criterion. It is the same story in regard to the white loaf; as white is an emblem of purity itself it must follow that the whiter the loaf the purer must the bread be. From one point of view that may be true but only when the essential nutritious and appetising constituents are regarded as impurities. With milk the case is reversed; it must not be white but a creamy yellow or brown. The addition of annatto or of methyl-orange to milk does not augment, it is needless to state, its creamy constituents. They remain just the same but the colour is heightened in order to create the impression that more cream is present than is really the case. Surely the intention here is to deceive, to convey a false impression to the consumer that the milk is rich. The public would be far wiser if it would entertain always a strong suspicion about milk which presents a decided brown coffee-like colour. The milkseller in his anxiety to impress the public with the excellent "creamy" quality of the milk which he supplies invariably overdoes the trick and the result is a milk having a colour more like that of pure cream than that of milk. But it is possible to find pure cream and pure milk which are nearly white. After all it is only the cream of certain breeds of cows that is decidedly brownish in colour. Brown is no more normal to cream than it is to a new-laid egg. There are many people by the way who choose the brown-coloured egg in preference to the white one because the former looks "richer." Here again this preference is met by staining the white egg a coffee colour. It is time that this tampering with the normal appearance of milk by adding dye to it should be stopped. The practice is very extensively pursued judging from several samples of milk which we have recently had occasion to examine; indeed, some of the samples proved to be dyed very heavily with an aniline dye. We hope the public will exercise its commonsense in this matter and abandon the silly criterion of colour in regard to a number of articles of food, more particularly in regard to milk, and will demand this natural food in its natural condition. The infant should be spared the aniline dye and his guardians should see that such is the case. An Act of Parliament is needed which besides providing against the addition of water and the abstraction of fat shall prohibit under severe penalty the addition of any foreign substance whatever to milk.

THE MEDICAL SUPERVISION OF NURSLINGS IN FRANCE.

THE serious political problem presented by the stationary condition of the population of France has directed attention to the best means of checking the great infantile mortality. Hence has arisen the regular medical supervision of infants, termed "*Consultations de Nourrissons.*" In the *Archives Générales de Médecine* of May 16th Professor Budin has given an interesting account of the origin, organisation, and results of this system. When "*chef de service*" at the Charité Maternity he was struck with the high mortality of the infants after they they left hospital. When the mothers returned home they had no proper guidance and made mistakes in nursing with disastrous results. In 1892 Professor Budin asked the director of the Assistance Publique for permission to see once a week the infants who had been born in his hospital in order that he might direct the mothers as to their nursing and when suckling was insufficient supply good sterilised milk. After some opposition on the grounds of expense permission was granted and the "*Consultation de Nourrissons*" was founded. It is organised as follows. The mothers leave the hospital trained to suckle their infants and receive a card on which are marked the date of birth and the weight of the infant. Children entirely nourished at the breast are brought for inspection once a fortnight, but those dependent, partially or entirely, on sterilised milk are brought once a week. The infant is weighed each time and the result is marked on the card. Any necessary advice is given and the mother is encouraged to continue to suckle. This clinic Dr. Henri de Rothschild has aptly termed the "*école des mères.*" If the maternal milk is insufficient sterilised milk is prescribed on the card in definite quantities. The infants attend the "*Consultation*" until the age of two years. Each card shows at a glance the life-history of the child—the curve of increase of weight, the quantity of sterilised milk taken, and particulars as to dentition, difficulties of weaning, and illnesses. Professor Budin's "*Consultations*" have proved such a success that similar ones have been founded all over France. Dr. Dufour, who founded one at Fécamp in 1894, gave it the name of "*Goutte de Lait,*" which has become general. The results obtained are certainly remarkable. In France infantile mortality is high. In the years 1896 to 1900 from 160 to 170 per 1000 of the infants born died in the first year of life. The causes of the deaths in the first year of life in the towns of France are distributed as follows per 1000: gastro-intestinal affections, 385; affections of the respiratory system, 147; congenital debility, 171; tuberculosis, 25; contagious diseases, 49; and other causes, 223. Thus the most important causes are gastro-intestinal affections. Now at Professor Budin's "*Consultation*" the extraordinary result has been achieved of reducing mortality from these last affections to zero. In the years 1892 to 1898 only a single death occurred from gastro-enteritis and even this was a further proof of the value of the system. The mother left

the child at a *crèche* where he received bad milk and contracted diarrhœa. He recovered but he was sent a second time to the *crèche* where in the same way he contracted "infantile cholera," which proved fatal. Subsequently to 1898 only one other death from diarrhœa has occurred and in that case too it was due to disobedience. In cases of congenitally feeble children special directions were given as to diet and to clothing. Since the year 1898 there have died only 93 (10·8 per cent.) out of 859 such children who weighed at birth less than 2500 grammes. The mortality of the children brought for consultation is much lower than the general mortality. Thus in the years 1898, 1899, and 1900 the former for the first year of life was only 46 per 1000, while that of Paris generally was 178. For pulmonary diseases the mortality was 17 while that of Paris was 32. In the towns of France "*Consultations de Nourrissons*" have also given excellent results. For example, in Saint-Pol-sur-Mer the deaths of infants in the first year of life per 1000 births was for the five years ending 1902 288; in 1903, after the establishment of a "*Consultation*," it fell to 209; and in 1904 to 151, in spite of the very hot summer. In Arques there was a similar diminution from 190 to 101 and 112 for the years 1903 and 1904 respectively. In the latter year the mortality in the neighbouring communes of Blendecques, Wizernes, and Longuenesse, where no "*Consultation*" existed, was respectively 136, 190, and 200. Moreover, in Arques, while the general mortality in the years 1903 and 1904 was that stated above, that of the infants brought for consultation was still lower—only nine and 34 respectively. Professor Budin attributes these surprising results largely to the enjoining of suckling. At the Clinque Tarnier 95 per cent. of the children are nourished at the breast, partly or entirely. In the feeding of infants Professor Budin regards the weighing machine as the great guide as to whether sufficient milk is being taken or not. If the infant is not gaining weight normally and there is nothing pathological to account for this the quantity of milk must be insufficient. Weighing the child before and after taking the breast may show that the quantity yielded is too small. Then sterilised milk must be used to supplement the maternal milk. On the other hand, it is important to avoid giving too much milk, which is a greater evil than giving too little for a short period. The former mistake will cause digestive disturbances but the latter only a temporary arrest of growth. As to the quantity of cows' milk required daily by a normal infant Professor Budin's extensive experience has led him to formulate the useful rule that the amount corresponds accurately to a tenth of the weight of the body. He uses milk sterilised in a water-bath at 100° C. In a dozen years he has had at his "*Consultation*" only a single case of rickets, and that slight, when the mother had not followed his advice; one case of eczema; and not one of scurvy.

THE subject of Tuberculosis of the Kidney was chosen by Dr. Howard A. Kelly, Professor of Gynæcological Surgery in the Johns Hopkins University, Baltimore, for his address delivered on June 8th before the British Gynæcological Society and published in abstract at p. 1630 of our present issue. There was a good attendance, about 80 members of the society and their friends being present, and subsequently a conversazione was held. Before the delivery of the address Dr. Howard Kelly was entertained to dinner at the Café Monico by Dr. H. Macnaughton-Jones. Amongst those present at this dinner were Dr. W. Alexander of Liverpool, Sir W. J. Sinclair of Manchester, Mr. Watson Cheyne, Dr. W. Duncan, Dr. J. H. Swanton, and Professor J. W. Taylor of Birmingham.

THE Cavendish lecture of the West London Medico-Chirurgical Society will be delivered on Friday, June 23rd, at 8.30 P.M., in the town hall, Hammersmith, by Dr. J. F. Goodhart, who has taken as his subject, Disease of the Heart. The usual conversazione, with surgical exhibits and a smoking concert, will be held by the West London Medico-Chirurgical Society upon the occasion.

Dr. Clement Godson has been elected a corresponding member of the Società Italiana di Ostetricia e Ginecologia. Professor Pasquali, the President, in making the announcement refers to "the first successful Cæsarean operation performed in Great Britain after the Porro method which helped so much to render this form of operation acceptable in England."

AT the meeting of the weekly board of the Royal Free Hospital held on June 14th Mr. Charles Burt tendered his resignation of the post of chairman, which he has held for the past ten years. Mr. C. W. Blackman was appointed as his successor, Mr. Burt retaining the post of treasurer.

THE annual banquet of the Association of British Postal Medical Officers will be held in the Whitehall Rooms of the Hôtel Métropole, London, on Thursday, July 13th, at 7 for 7.30 P.M. The President, Dr. John Brown, will occupy the chair.

THE NEW KING'S COLLEGE HOSPITAL.

WE append an illustration of the plan of the new buildings of King's College Hospital. The idea which the architect set himself to carry out is described in his official report as aiming at unifying the nursing and general administration of the hospital, while reducing to a minimum the labour attendant on such services:—

The vertical axis of the hospital, from north to south, upon the lower floor of the sick wards, suggested by the contour of the site (which rises rapidly towards the south) is occupied by the official nursing staff. That is to say, the sister matron's apartments are placed upon the first floor of the administration block and occupies the central position of the site, opening from which are her official offices and the general rooms connected with the nursing direction. From this central and unique position the administration of the sick wards, the nurses' home, and the general administration radiates. At the head of this official section (which is in close and direct communication with the secretarial department below) is found the grand staircase, which runs from the ground floor of the front block to the top floor of hospital, a central position being provided for the chapel, which is placed on the same level as the nursing offices; at this point, carrying out the central idea (the left wing being the surgical side and the right wing the medical), have been placed the post-office and telephone room, with interchangeable communication throughout the hospital, and with the metropolitan systems described in detail later on. From this office the register of "Roll Call" could be made. Adjacent and in the same central position is a waiting room—for friends of patients awaiting intelligence—and a doctors' room in connexion with same have been provided, while a servants' staircase completes the exact central theme, their sleeping quarters being over the central building in the court. The same central and radial principle has been applied to the kitchen and stores department, which are below the same centre, with dual diet lifts, serving to both sides of the hospital. The linen department is likewise placed in the same relation to the whole, being below the chapel, with direct access to all parts of the hospital and the laundry block. In arranging the housing of the nurses as to present and future requirements, the resident medical officer's apartments, and the servants' quarters, particular attention in the planning has been given to ensure that while being provided in the same block they are self-contained and do not inter-communicate with each other. We have dealt at some length on this point, as it is desired to call particular attention to the principle of centralisation and radiation in all departments of the hospital, a principle which we venture to think is lost sight of in much modern hospital planning and which is absolutely essential if a hospital is to be administered effectively and with efficiency in the cure of the sick, as well as economically in the expenditure of charitable funds.

The architect calls particular attention to the segmental form of plan for the isolation block, which he describes as the result of the study of Paris examples. He says:—

First, the position on the site lends itself in a peculiarly appropriate way to this form, presenting the following advantages: (A) as taking up the least amount of site space; (B) of securing absolute privacy; (C) securing direct *cross ventilation* to each cell; (D) it procures for each cell a due amount of available sunlight; (E) complete supervision and nursing from both sides. In fact, the proposal,

which can only be considered as tentative, is full of suggestive possibilities—not the least practical being that one-half of the wards might be built in the first instance. Direct cross ventilation is secured by keeping the nursing corridor at a lower level than the wards, thus securing an open space above, while on the upper floor the ceiling of the corridor becomes a flat with no intervening space. Friends can visit the patients by an outside access and see them from the balconies, which are also available for outside nursing and for the removal of evacuations. Some of the cells have been arranged to communicate when it may become necessary to isolate the nurse as well as the patient, or where it may be necessary to isolate a whole family. We observed in Paris with interest the custom of taking in a mother with a sick child, the former, of course, having to conform to regulations. By the arrangement of this plan ducts and their cleaning can be avoided and unfettered ventilation secured under control by louvres, according to the directions of the wind. The heating would be by hot-water radiators or, if thought desirable, in the case of the cells by electric radiators. The system of cells is doubled so that every pair are parted by a cross wall, the remaining part being metal glazed screens; the doors and windows are of metal construction and glazed; the patients cannot open these doors, which are operated only by the nurses. The blinds are outside, as also are the blind cords. Each cell will have its own sink, water-supply, gas-jet, and electricity for sterilisation, as well as steam jets also available for a like purpose. The dado around the cells and corridors will be of fire-clay glazed both sides, measuring 4 feet × 2 feet × 1 foot 6 inches. The duty room and sick room are centrally placed and here the nickel plates, cups, &c., are sterilised after use. The patient is bathed in his cell and the dirty linen is put into a cylindrical box and removed for disinfection. The arrangements for convalescents are located as before described in circular rooms and isolated from the ward block, with their own sanitary conveniences. The centre part is occupied by the entrance and the receiving and robing rooms and bed lift, while on the upper floor an operation room has been provided, with the annexes. The economy of the isolation hospital is complete in itself and it is cut off from the general hospital by surrounding walls and gates with a complete zone.

Block C.—Lower and middle floors: Women. Upper floor: Gynæcology.

Block D.—Lower floor: Children. Middle floor: Women. Upper floor: Maternity.

MEDICAL SIDE.

Block E.—Lower floor: Children. Middle and upper floors: Women.

Block F.—Lower, middle, and upper floors: Men.

Block G.—Lower, middle, and upper floors: Future extension.

Block H.—Lower floor: Eyes. Upper floor: Ears, throats, and skins.

Block I.—Lower and upper floors: Future extension.

Block J.—Isolation block.

Block K.—Isolation block, administration, and nurses' home.

Block L.—Casualty department.

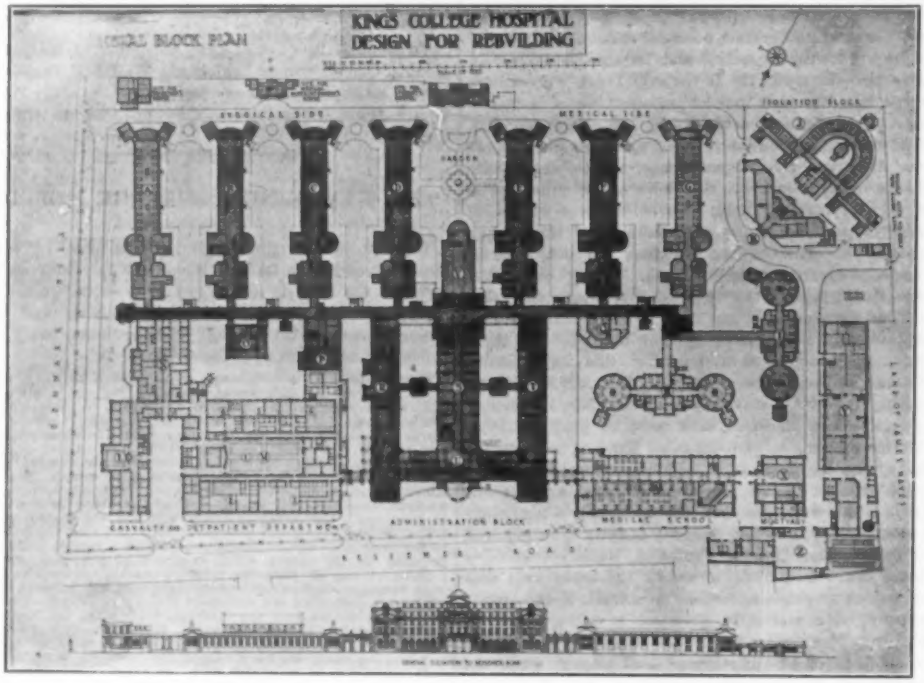
Block M.—Out-patient department: 1. Waiting hall. 2. Surgical section. 3. Ophthalmic out-patient section. 4. Gynæcological and Children's section. 5. Medical section. 6. Ear and throat section. *Note.*—The Dental section is over Nos. 4, 5, and 6, and the electrical section of out-patients' department is over Block N.

Block N.—Bathing establishment. Electrical section of out-patient department over.

Block O.—Three operation theatres.

Block P.—Dispensary; surgical clinical theatre over; gynæcological operation theatre over.

Block Q.—Medical clinical theatre.



It will be seen that the great novelty of the new hospital is the isolation block (J) which has been modelled, with important modifications, upon the Pasteur Hospital, Paris. It is unnecessary to give in detail the features of the new building because the appended illustration so clearly conveys both the conception of the architect and his achievement. The whole building has been most carefully thought out so as to combine economy with efficiency and, so far as human forethought can provide, the new hospital ought to be a model. The architect is Mr. W. A. Pite, F.R.I.B.A., and we congratulate him upon the happy combination of the æsthetic with the useful which is displayed in his design.

The following is the reference table to the block plan:—

SURGICAL SIDE.

Block A.—Lower, middle, and upper floors: Future extension.

Block B.—Lower, middle, and upper floors: Men.

ADMINISTRATION BLOCK.

Block R.—Ground floor: Nurses' dining rooms. First floor: Nurses' recreation rooms. Second and third floors: Nurses' bedrooms.

Block S.—Ground floor: Common rooms, resident medical officers; common rooms, hospital clerks and dressers. First floor: Matron's department. Second floor: Servants' bedrooms.

Block T.—Ground floor: Resident medical officers. First, entresol-second, and third floors: nurses' bedrooms.

Block U.—Ground floor: Secretary's department and staff rooms. First floor: Sister, matron, &c. Second and third floors: Nurses' bedrooms. Fourth floor: Nurses' bedrooms (extension).

Block V.—Linen department: future chapel over; future roof garden over. *Note.*—The kitchen and stores departments and the servants' living rooms occupy the basement of Blocks R, S, T, U, and the courts between same. The porter's quarters are adjacent to Block T.

Block W.—Pathological department, medical school buildings, and students' clubs.

Block X.—Post-mortem department.

Block Y.—Laundry department.

Block Z.—Out-buildings.

Mr. Gordon Hooper, L.D S. Eng., of Khartoum, has been appointed Dental Surgeon to the Egyptian Army and the Soudan Government.

THE INDIAN MEDICAL SERVICE: ANNUAL DINNER.

THE officers of the Indian Medical Service held their annual dinner on June 8th at the New Gaiety Restaurant, Surgeon-General JAMES CLEGHORN, C.S.I., being in the chair. In addition to the usual loyal toasts the toast list was as follows. "The Sister Services," proposed by Surgeon-General Sir A. C. C. DE RENZY, K.C.B., and responded to by Inspector-General HERBERT M. ELLIS, R.N., Director-General of the Royal Navy Medical Service. Surgeon-General A. H. Keogh, C.B., Director-General of the Army Medical Service, was also to have responded but at the last moment was unavoidably prevented from being present. "The Guests," proposed by Surgeon-General A. M. BRANFOOT, C.I.E., and responded to by Sir RICHARD DOUGLAS POWELL, Bart., K.C.V.O., President of the Royal College of Physicians of London. "The Indian Medical Service," proposed by Mr. JOHN LANGTON, F.R.C.S., was responded to by the CHAIRMAN who said: "I have much pleasure, on behalf of the service, in thanking Mr. Langton for the kind and cordial terms in which he has proposed the toast. In responding, I should like with your permission, to say a few words in appreciation of the service in which I have passed the best years of my life; but before doing so I would explain that this is the first occasion on which I have had the opportunity of being present at the annual dinner and when the committee, through Lieutenant-Colonel Freyer, asked me to preside I felt that as a late Director-General of the service it was my duty, as it was a pleasure, for me to accept the honour. As you are aware, we have learned many things in India, but the art of public speaking is not, as a rule, one of those we have acquired—perhaps we are better without it—particularly on an occasion of this kind, when I take it we meet more to revive the memories and renew the friendships of the past than to make speeches. These meetings also help us to realise that although we are divided into many departments, both officially and geographically, we are one service with common interests and all aiming to maintain and continue the honourable traditions of that service, and as a consequence the prestige of our nation and government, among the different races of India. Those traditions carry us back to the time of the Emperor Shah Jehan, when, as I have read, the first concessions granted to the Honourable East India Company were obtained through the influence of one of the Company's medical officers named Boughton who, after his successful treatment of a daughter of the Emperor, was asked to name his own reward, when he replied that the only remuneration he would accept was an order granting to the Company the privilege of trading in Bengal free of duty and of planting factories in the interior of the country. Since then the service by its influence on the people, through its medical work, has been helping to oil the wheels of government and a long roll of individuals have distinguished themselves in the various positions and appointments they have held. One occasionally hears or reads uncomplimentary remarks with regard to our work in the field of original research and of the slow development of a complete sanitary organisation, but we who know the local conditions and circumstances understand the difficulties which surround the path of progress in particular directions. Laboratories are, I understand, being established by the Government, and other facilities are now available for the pursuit of original investigations and I have no doubt that in due course good results will follow. Hitherto we have been making bricks without straw—we early mastered that art—and though the products may not have been equal to the finished article we have been able to meet the requirements of the country and the Government. The immensity of our medical and surgical work, the number of medical institutions, the colleges, schools, hospitals, dispensaries, and asylums are practically unknown out of India, they are certainly not realised, and our work in connexion with the establishment and supervision of the institutions associated with the revered name of Lady Dufferin has been eminently successful. All this medical work has overspread the whole of India and Burmah; it has exercised a more beneficial influence over the people than any other agency at present in operation and it has developed a sympathetic and kindly feeling between the members of the service and the natives of India, a feeling, moreover, that the British Government is a beneficent one. On the other hand, we have become the guardians and reformers of the criminal class. The connexion between medical work and the administration of jails is not quite apparent to the ordinary observer—but India is full of anomalies, and I suppose, as the civil surgeon was there, it was considered to be economical and advantageous to utilise his services as superintendent of the district jail—and practically the whole of the jail department has grown up and developed under selected officers of the service. Our ordinary duties are occasionally varied by a call to meet the requirements and exigencies of war, famine, and pestilence, and, as occurred lately, all three may come at once. Our resources were then strained and assistance, in the case of plague, had to be obtained from England. As we make bricks without straw, it is needless to say that all the institutions we manage are worked on economical lines—and the various duties are discharged without any ostentation or particular fuss—things are taken as a matter of course and whether we are employed on military or civil duties we try to do the work set before us to the best of our ability. The manifold duties and responsibilities which devolve on the service and the unique opportunities which occasionally offer to the man with special talents or capabilities, these, combined with the pay and pension, are the main inducements which attract men to the service—but there are others not so apparent. We enter the service at an impressionable age—in a land full of mysteries, with customs and beliefs different from our own. Life in such a land modifies our ideas, broadens our views, and deepens our sympathies. The responsibilities we have to face develop the character and tend to make men of us. There are, of course, drawbacks; with them we are well acquainted, but, on the whole, I think, we made a wise choice in selecting the Indian Medical Service as a career."

Lieutenant-Colonel P. J. FREYER, to whom the organisation of these dinners is due, being called upon made some remarks which he humorously characterised as "proposing his own health." He received musical honours.

The following officers were present:—*Surgeon-Generals:* A. M. Branfoot, C.I.E., J. Cleghorn, C.S.I., Sir A. C. C. De Renzy, K.C.B., C. Sibthorpe, C.B., and P. W. Sutherland. *Colonels:* W. E. Cates, W. Gray, D. E. Hughes, C. H. Joubert, G. S. Sutherland, J. S. Wilkins, and W. A. S. Wynne. *Lieutenant-Colonels:* J. Anderson, W. H. Cadge, G. W. P. Dennys, P. J. Freyer, I. B. Lyon, C.I.E., D. P. MacDonald, J. Moorhead, W. Owen, W. H. Thornhill, J. F. Tuohy, H. G. L. Wortabet, and P. A. Weir. *Majors:* R. Bird, W. S. Caldwell, J. T. Calvert, B. H. Deare, F. J. Drury, G. F. W. Ewens, G. H. Fink, E. V. Hugo, J. G. Jordan, R. C. MacWatt, W. H. B. Robinson, H. A. Smith, and E. Wilkinson. *Captains:* S. Anderson, F. L. Blenkinsop, H. R. Brown, T. H. Foulkes, E. D. W. Greig, W. A. Justice, C. A. Lane, A. E. H. Pinch, R. Selby, J. Stephenson, and A. W. C. Young.

An excellent dinner and after-dinner speeches of a reasonable length combined to make the occasion as pleasant and as successful as its predecessors.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

ELECTION OF MEMBERS OF COUNCIL.

ON Thursday, July 6th, an election of four members of Council will be held by the Fellows of the Royal College of Surgeons of England. Three of these vacancies will be occasioned by the retirement in rotation of Sir Henry G. Howse, Mr. Edmund Owen, and Mr. Rickman J. Godlee, and the fourth by the resignation of Sir Alfred Cooper. The following list of the members of the Council gives the date at which each member will retire. The date of the first election is given in every case in which the member has been elected to the Council more than once. Mr. J. Tweedy having been re-elected President in 1904 will have another year of office.

Retire in 1912: Mr. H. Gilbert Barling, Birmingham General Hospital; Mr. Anthony A. Bowlby, St. Bartholomew's Hospital; and Mr. Frederic S. Eve, London Hospital.

Retire in 1911: Mr. H. T. Butlin, St. Bartholomew's Hospital (first elected 1895); Mr. G. H. Makins, St. Thomas's Hospital; and Mr. C. T. Dent, St. George's Hospital.

Retire in 1910: Professor Howard Marsh, St. Bartholomew's Hospital (first elected 1892); Mr. J. H. Morgan, Charing Cross Hospital; and Mr. H. H. Clutton, St. Thomas's Hospital.

Retire in 1909: Mr. A. W. Mayo Robson, Leeds Infirmary (first elected 1893); Mr. W. Watson Cheyne, King's College Hospital; and Mr. R. Clement Lucas, Guy's Hospital.

Retire in 1908: Dr. J. Ward Cousins, Royal Portsmouth Hospital (first elected 1895); and Mr. A. Pearce Gould, Middlesex Hospital.

Retire in 1907: Mr. H. W. Page, St. Mary's Hospital; and Mr. C. W. Mansell Moullin, London Hospital.

Retire in 1906: Mr. J. Tweedy, President, University College Hospital (first elected 1892); Mr. F. Richardson Cross, Bristol Royal Infirmary; Mr. Henry Morris, Middlesex Hospital (first elected 1893); and Mr. John Langton, St. Bartholomew's Hospital (first elected 1890).

Retire in 1905: Sir Henry G. Howse, Guy's Hospital (first elected 1889); Mr. Edmund Owen, St. Mary's Hospital; and Mr. Rickman J. Godlee, University College Hospital.

Monday, June 12th, was the last day for receiving nominations and we understand that there are only six candidates for the four vacant seats. They are: Mr. Owen and Mr. Godlee, who are applying for reappointment; Mr. C. H. Golding-Bird, Mr. Andrew Clark, Mr. W. Bruce Clarke, and Mr. W. Harrison Cripps. It is a long time since there have been so few candidates for four vacant places. There can be only two unsuccessful candidates.

The Fellows' dinner held in 1904 was very successful and it has therefore been decided to hold a Fellows' dinner again this year. As the space available is limited it may be necessary to ballot for places but all applications for tickets should be made before June 22nd.

HOSPITAL SERMON.

BY REV. C. H. GRUNDY, M.A.,
VICAR OF ST. PETER'S, BROCKLEY.

"Gifts of healing"—I. Cor. xii. 9.

ONCE a year all party strife ceases in the religious world of London. No word of bitterness issues from the pulpits of London to-day. The question is not "What body of Christians do I belong to?" but "What can each one do to relieve the mass of suffering humanity in this great metropolis, larger in its population than Babylon, Thebes, or Rome ever was?" Hushed is the voice of controversy in the presence of disease and pain. The "deep sighing of the poor" in their anguish reaches all our ears, as from thousands of pulpits the call goes out to help men, women, and children in their need, struck down by accident or visited by disease. Their extremity is the measure of our sympathy and their weakness the strength of their claim upon us. There are countless opportunities for pain in the human body, so that the wonder is that health is sustained at all. Huxley says: "The human body is an army. Each cell is a soldier. An organ is a brigade. The central nervous system is the headquarters and field telegraph. The alimentary canal and circulatory system are the commissariat. Each cell has its life, duties, waste, repair, growth, and decay."

What complex beings we are! The phrase "*being ill*"—who does not know what that means, in himself, in loved ones, in the tender work of nursing, in the hours of agony when the doctor whispers "Nothing more can be done"! People in rude health joke sometimes about "not believing in doctors," but what a panic there is in the house the moment someone is smitten down by illness. The sudden stroke, the epidemic, the collapse from overwork, the wasting disease, the young wife hovering between life and death that another soul may enter upon earth, the little child at school one week and at death's door the next, the stranger calling to break the sad news at home that the husband has met with an accident in the street and is now in hospital; how familiar all these are to us, yet what anxiety, sorrow, and dread they represent. A serious illness taxes to the utmost all the capacities of even a well-to-do household. Things to be bought, thought of, borrowed, attempted; the nights of watching, the days of consultation, the visit of the specialist, the tension of the climax, the joy of hope, and the weary convalescence—what an experience for the members of the comfortable home. What gratitude afterwards to the patient doctor whose skill has saved your darling! But where did he learn it all? What training made him calm and resourceful and ready with the best and latest treatment in that hour of misery when all else seemed to fail? You owe the life of your loved one to the hospital. It was *there* that the rescuer of your dear one was taught what to do, and when to do it, and how to do it. You owe ransom money to the hospitals, for without them there would have been the empty chair beside your hearth. Year by year they supply men able, qualified, experts in their work, devoted to their duty, responsive to the call of suffering, and quick to diagnose and to act.

There is no band of men more unselfish, more untiring, more thoughtful, more capable than the brotherhood of the medical profession in London. Often—very often—no fee is received by them after weeks of tender, assiduous attention to some critical case. These are the saviours of humanity and their success is due to the schools of the hospitals for which I plead to-day. Among the noble army of medicine and surgery some names are remembered. They have struck the popular imagination. What recollections are recalled by names like Paget, Lister, Horrocks, Jenner, Gull, Treves, and many others which could be mentioned. If the Church has its saints the hospitals have noble benefactors of mankind. If the Church points out salvation for the souls of men let us not forget what the hospitals have done for their bodies. Christ was the healer of the body as well as the soul and the hospitals in His name undertake the care of their bodies. The hospital is the sick room and the invalids' shelter amongst the poor. It would do you good to go to a children's hospital, say, the one in Great Ormond-street, and see a patient, sweet, clean child in its dainty cot, suffering from, say, hip disease, and then go and see the dirty squalid home from which the child came.

What would Whitechapel do without the 840 beds of that splendidly managed hospital—the London Hospital—willing to receive the crowds of sick from one-roomed homes? How many lives have been saved at Guy's of railway men half killed on the shuntings of two great railway companies? What an awful thing for Westminster or the locality round St. Thomas's if there were no hospitals! You would double your subscription if you realised the boon to the masses of this great metropolis. The scientific gifts of healing are the glory of England and the inestimable blessing of the poor. London with its wealth should not be content with a paltry £60,000 as its response to the annual appeal. £100,000 would be an easy and a willing gift on a day like this did men and women realise their duty to the poor and the Christ-like work done by the hospitals in this city of suffering.

Looking Back.

FROM

THE LANCET, *SATURDAY*, June 16, 1827.

As the opinion which we form of the nature of a disease must be true or untrue, and as the treatment is founded upon that opinion, hence arises the absolute necessity of possessing correct principles of pathology, that dogmatism may be avoided on the one hand and empiricism on the other; or rather, that we may avoid a series of hazardous experiments on the health and lives of confiding patients, ignorant of the imperfections of the professors of an art, which has been too long concealed under a language almost as incomprehensible, to common minds, as the hieroglyphics of the ancient Egyptians; yet all that is really known, in modern medicine, might be expressed in a few plain English words, the rest being merely verbiage, a part of the mummery and mystery of scholastic and collegiate sophistry. Indeed, no part of human knowledge has been till recently kept so completely concealed from the public view as medicine, and this is the reason why some of its professors have risen to the highest distinctions without substantial attainments. The public can judge of the abilities of a barrister, but their ignorance of the elements of physic utterly prevents

them from forming anything like a right estimate of the powers of a physician, as far as the exercise of his art is concerned. Dr. Johnson remarked, that the history of the means by which some physicians became extensively popular, would be extremely amusing; but it might be more truly said that it would be a most lamentable exposure of the frailties of the human mind and heart, by showing that men had held responsible and even sacred situations, without the practical acquirements necessary for the discharge of those duties which relate to the lives of patients and the happiness of their friends, and which, indeed, in some cases, involve the very best interests of society; for example, where the health of public characters is at stake. It would be highly advantageous to the public, and likewise to the best part of the medical profession, if the elements of modern medicine were made a portion of the liberal education of every gentleman, for then medical men and medical measures would be under the wholesome control of public opinion, so that practitioners would be estimated by their merit, and some of our corporate institutions would undergo those salutary changes which are imperatively demanded by the increased intelligence of the age. If any thing requires to be narrowly watched, it is the corporate spirit which is so apt to make men, in pursuing their own advantages, lose sight of the general welfare. One cause of much of the evil existing in society, is the selfishness with which we attempt to compass our ends, not duly considering what we owe to the interests of others; and another cause of evil, is the indifference or indisposition to maintain those strict rules of justice, by which the rights of public institutions are upheld against the encroachments of sinister designs.[1]

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 8528 births and 4051 deaths were registered during the week ending June 10th. The annual rate of mortality in these towns, which had been 14·4, 14·6, and 14·9 per 1000 in the three preceding weeks, declined again to 13·5 per 1000 last week. In London the death-rate was 13·8 per 1000, while it averaged 13·4 per 1000 in the 75 other large towns. The lowest death-rates in these towns were 3·5 in Barrow-in-Furness, 5·0 in Great Yarmouth, 5·9 in Leyton, 6·2 in Hornsey, 6·7 in Reading, 6·8 in Handsworth (Staffs), 7·7 in Grimsby, and 7·8 in Rotherham; the highest rates were 17·5 in Plymouth, in West Hartlepool, and in Tynemouth, 20·0 in Smethwick, 20·2 in Hanley, 20·3 in Salford, 22·8 in Middlesbrough, 23·1 in Oldham, and 23·3 in Merthyr Tydfil. The 4051 deaths in these towns last week included 413 which were referred to the principal infectious diseases, against 442, 414, and 410 in the three preceding weeks; of these 413 deaths, 144 resulted from measles, 109 from whooping-cough, 60 from diarrhœa, 42 from diphtheria, 26 from scarlet fever, 25 from "fever" (principally enteric), and one from small-pox. No death from any of these infectious diseases was registered last week in Leyton, Brighton, Bournemouth, Southampton, Northampton, Great Yarmouth, Burton-on-Trent, King's Norton, Aston Manor, Leicester, York, or Tynemouth; while they caused the highest death-rates in West Bromwich, Smethwick, Coventry, Derby, St. Helens, Middlesbrough, West Hartlepool, and Merthyr Tydfil. The greatest proportional mortality from measles occurred in West Bromwich, Smethwick, Coventry, Derby, St. Helens, Sheffield, Middlesbrough, and Merthyr Tydfil; from scarlet fever in Oldham; from diphtheria in Rochdale and West Hartlepool; and from whooping-cough in Tottenham, East Ham, Walthamstow, Hanley, Preston, Middlesbrough, and Sunderland. The mortality from "fever" and from diarrhœa showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Derby, but none in any other of the large towns. The number of small-pox cases remaining under treatment in the Metropolitan Asylums Hospitals, which had been 15, 10, and nine on the three preceding Saturdays, was again nine on Saturday, June 10th; three new cases were admitted during the week, against three, none, and one in the three preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital at the end of last week was 2285; against 2211, 2200, and 2287 at the end of the three preceding weeks; 269 new cases were admitted during the week, against 319, 312, and 351 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 226, 218, and 235 in the three preceding weeks, declined again last week to 191, but were 34 above the number in the corresponding period of the preceding year. The causes of 33, or 0·8 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Bristol, Nottingham, Salford, Bradford, Leeds, Hull, Newcastle-on-Tyne, and in 50 other smaller towns; while the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Sheffield, Sunderland, and South Shields.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 16·7, 18·1, and 16·9 per 1000 in the three preceding weeks, declined again to 16·4 per 1000 during the week ending June 10th, but was 2·9 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 12·8 in Leith and 14·9 in Aberdeen to 20·1 in Paisley and 21·3 in Perth. The 551 deaths in these towns included 23 which were referred to whooping-cough, 17 to measles, 14 to diarrhœa, four to diphtheria, three to "fever," and one to scarlet fever. In all 62 deaths resulted from these principal infectious diseases last week, against 76, 76, and 80 in the three preceding weeks. These 62 deaths were equal to an annual rate of 1·8 per 1000, which was 0·4 per 1000 above the death-rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 24 in each of the two preceding weeks, declined last week to 23, of which 16 occurred in Glasgow, four in Edinburgh, and two in Paisley. The deaths from measles, which had been 26, 30, and 33 in the three preceding weeks, fell to 17 last week, and included 14 in Glasgow, and three in Edinburgh. The fatal cases of diarrhœa, which had been seven and 16 in the two preceding weeks, declined again last week to 14, of which seven were registered in Glasgow, three in Edinburgh, and three in Dundee. The deaths from diphtheria, which had been three, seven, and one in the three preceding weeks, rose again to four last week, and included three in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 83, 107, and 88 in the three preceding weeks, were 89 last week, and were 21 in excess of the number in the corresponding period of last year. The causes of 22, or nearly 4 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·5, 19·0, and 19·4 per 1000 in the three preceding weeks, declined again to 19·3 per 1000 during the week ending June 10th. During the past four weeks the death-rate has averaged 19·3 per 1000, the rates during the same period being 14·3 in London and 16·0 in Edinburgh. The 140 deaths of persons belonging to Dublin registered during the week under notice were slightly below the number in the preceding week and included five which were referred to the principal infectious diseases, against six, four, and eight in the three preceding weeks; of these, three resulted from measles and two from whooping-cough, but not any from small-pox, scarlet fever, diphtheria, "fever," or diarrhœa. These five deaths were equal to an annual rate of 0·7 per 1000, the death-rates last week from the principal infectious diseases being 1·5 in London and 2·0 in Edinburgh. The fatal cases of measles, which had been one and three in the two preceding weeks, were again three last week; the deaths from whooping-cough, which had also been one and three in the two preceding weeks, declined again last week to two. The 140 deaths in Dublin last week included 22 of children under one year of age and 51 of persons aged 60 years and upwards; the deaths of infants showed a decline, but those of elderly persons were considerably in excess of the number in the preceding week. Eight inquest cases and five deaths from violence were registered; and 60, or

[1] Excerpt from Dr. Armstrong's Introductory Address to a Course of Lectures on Morbid Anatomy, and on the Nature and Treatment of Acute and Chronic Diseases, delivered on Friday, the 1st of June, at the Medical School, Webb-street, Maze-Pond.

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING MAY, 1905.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated population in the middle of 1905.	NOTIFIED CASES OF INFECTIOUS DISEASE.										DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cholera.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON...	4,684,794	11	1686	547	—	123	—	31	386	—	2786	6·2	2	228	38	36	212	—	19	—	86	621	1·4	6304	14·0	162
West Districts.																										
Paddington	147,935	—	17	8	—	1	—	—	6	—	32	2·3	—	18	—	2	6	—	—	—	3	29	2·0	199	14·0	111
Kensington	180,083	—	59	13	—	11	—	—	14	—	97	5·6	—	9	1	1	11	—	2	—	5	29	1·7	232	13·4	136
Hammersmith	119,037	—	27	22	—	4	—	1	14	—	68	6·0	—	4	—	1	9	—	—	—	—	14	1·2	157	13·8	118
Fulham	157,210	—	71	22	—	4	—	1	12	—	110	7·3	—	13	2	3	9	—	1	—	7	35	2·3	223	14·8	104
Chelsea	74,498	—	22	2	—	1	—	2	11	—	38	5·3	—	—	—	—	3	—	1	—	—	4	0·6	89	12·5	135
City of Westminster	175,606	—	22	11	—	3	—	2	11	—	49	2·9	—	2	—	—	3	—	—	—	5	10	0·6	214	12·7	99
North Districts.																										
St. Marylebone	129,453	—	35	14	—	6	—	2	12	—	69	5·6	—	8	1	—	6	—	—	—	3	18	1·4	199	16·0	76
Hampstead	88,142	—	24	7	—	3	—	—	5	—	39	4·6	—	1	2	—	4	—	—	—	1	8	0·9	56	6·6	64
St. Pancras	236,183	—	75	29	—	6	—	—	14	—	124	5·5	—	6	4	4	7	—	—	—	7	28	1·2	202	13·3	101
Islington	342,994	—	107	25	—	10	—	4	14	—	160	4·9	—	5	—	—	22	—	3	—	6	36	1·1	457	13·9	133
Stoke Newington	52,828	—	15	1	—	1	—	—	2	—	19	3·6	—	2	1	—	2	—	—	—	—	5	1·0	73	14·4	79
Hackney	228,479	1	89	29	—	16	—	1	26	—	162	7·4	—	14	2	2	8	—	2	—	4	32	1·5	296	13·5	97
Central Districts.																										
Holborn	56,481	—	18	8	—	1	—	—	4	—	31	5·7	—	4	1	—	1	—	—	—	2	8	1·5	91	16·8	98
Finsbury	98,207	—	43	12	—	1	—	2	10	—	68	7·2	—	6	2	1	8	—	—	—	3	20	2·1	166	17·6	122
City of London	22,425	—	2	4	—	—	—	—	2	—	8	3·7	—	—	—	—	—	—	—	—	—	—	—	42	19·5	31
East Districts.																										
Shoreditch	116,565	—	63	25	—	3	—	—	12	—	103	9·2	—	8	4	1	14	—	—	—	1	28	2·5	206	18·4	139
Bethnal Green	130,401	—	70	26	—	5	—	1	20	—	122	9·8	—	7	1	4	5	—	1	—	4	22	1·8	217	17·4	117
Stepney	305,466	—	120	62	—	13	—	1	28	—	224	7·6	—	24	5	2	11	—	2	—	10	54	1·8	469	16·0	56
Poplar	170,280	—	83	33	—	2	—	1	12	—	131	8·0	—	18	2	—	15	—	—	—	5	40	2·4	270	16·5	122
South Districts.																										
Southwark	208,528	—	53	24	—	2	—	2	24	—	105	5·3	—	4	5	2	14	—	2	—	3	28	1·4	345	17·3	109
Bermondsey	129,006	—	49	14	—	5	—	—	15	—	83	6·7	—	6	—	2	2	—	—	—	4	14	1·1	194	15·7	117
Lambeth	313,045	—	125	41	—	3	—	—	34	—	203	6·8	—	3	3	2	16	—	—	—	2	26	0·9	409	13·6	91
Battersea	177,532	—	71	16	—	4	—	—	14	—	105	6·2	—	48	—	1	4	—	1	—	—	54	3·2	254	14·9	108
Wandsworth	266,392	1	153	32	—	4	—	1	20	—	201	7·9	—	1	—	1	10	—	—	—	3	15	0·6	258	10·1	59
Camberwell	271,240	4	112	27	—	7	—	3	24	—	177	6·8	—	9	2	3	7	—	—	—	2	23	0·9	228	12·6	112
Deptford	114,495	1	48	9	—	1	—	2	12	—	73	6·6	—	2	—	—	5	—	—	—	2	9	0·8	134	12·2	61
Greenwich	103,493	—	25	7	—	—	—	3	6	—	41	4·1	—	4	—	2	3	—	1	—	2	12	1·2	124	12·5	71
Lewisham	144,420	2	45	14	—	2	—	1	5	—	69	5·0	2	2	2	1	7	—	—	—	1	15	1·1	145	10·5	60
Woolwich	125,372	2	43	20	—	3	—	1	5	—	74	6·2	—	—	—	1	—	—	3	—	1	5	0·4	156	12·9	68
Port of London	—	—	—	—	—	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

more than 40 per cent., of the deaths occurred in public institutions. The causes of five, or nearly 4 per cent., of the deaths registered in Dublin last week were not certified.

VITAL STATISTICS OF LONDON DURING MAY, 1905.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 6·2 per 1000 of the population, estimated at 4,684,794 persons in the middle of the year. In the three preceding months the rates had been 5·9, 6·0, and 5·6 per 1000 respectively. The lowest rates last month were recorded in Paddington, City of Westminster, Hampstead, Stoke Newington, the City of London, and Greenwich; while the highest rates occurred in Shoreditch, Bethnal Green, Stepney, Poplar, and Wandsworth. Small-pox was rather less prevalent than it had been during the preceding month; of the 11 cases notified during May, four belonged to Camberwell, two to Lewisham, two to Woolwich, and one each to Hackney, Wandsworth, and Deptford. The Metropolitan Asylums hospitals contained nine small-pox patients at the end of last month, against 15, 20, and 16 at the end of the three preceding months; the weekly admissions averaged two, against four in each of the two preceding months. There was a considerable increase in the prevalence of scarlet fever last month; this disease was proportionally most prevalent in Fulham, Finsbury, Shoreditch, Bethnal Green, Poplar, and Wandsworth. The number of scarlet fever patients in the Metropolitan Asylums hospitals, which had been 1941, 1997, and 2152 at the end of the three preceding months, had further risen to 2236 at the end of last month; the weekly admissions averaged 302, against 231, 272, and 266 in the three preceding months. The prevalence of diphtheria showed no appreciable variation from that recorded in the preceding month; among the various metropolitan boroughs this disease was proportionally most prevalent in Hammersmith, the City of London, Shoreditch, Bethnal Green, Stepney, and Poplar. The Metropolitan Asylums hospitals contained 684 diphtheria patients at the end of last month, against 837, 788, and 719 at the end of the three preceding months; the weekly admissions averaged 89, against 118, 98, and 83 in the three preceding months. Enteric fever was slightly more prevalent than it had been in the preceding month; this disease showed the greatest proportional prevalence in Kensington, St. Marylebone, Hackney, Bethnal Green, Stepney, and Bermondsey. The number of enteric fever patients remaining under treatment in the Metropolitan Asylums hospitals at the end of last month was 80, against 105, 68, and 65 at the end of the three preceding months; the weekly admissions averaged 14, against 11, in each of the two preceding months. Erysipelas was proportionally most prevalent in Hammersmith, Chelsea, Hackney, Bethnal Green, Southwark, and Bermondsey. The 31 cases of puerperal fever notified during the month included four in Islington, three in Camberwell, three in Greenwich, and two each in Chelsea, City of Westminster, St. Marylebone, Finsbury, Southwark, and Deptford.

The mortality statistics in the table relate to the deaths of persons actually belonging to the various boroughs, the deaths occurring in public institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the five weeks ending June 3rd the deaths of 6304 persons belonging to London were registered, equal to an annual rate of 14·0 per 1000; in the three preceding months the rates had been 16·4, 15·5, and 15·1 per 1000. The rates last month ranged from 6·6 in Hampstead, 10·1 in Wandsworth, 10·5 in Lewisham, 12·2 in Deptford, and 12·5 in Chelsea and in Greenwich, to 16·8 in Holborn, 17·3 in Southwark, 17·4 in Bethnal Green, 17·6 in Finsbury, 18·4 in Shoreditch, and 19·5 in the City of London. The 6304 deaths from all causes in London last month included 621 which were referred to the principal infectious diseases; of these, two resulted from small-pox, 228 from measles, 38 from scarlet fever, 36 from diphtheria, 212 from whooping-cough, 19 from enteric fever, and 86 from diarrhœa, but not any from typhus or from ill-defined forms of continued fever. No death from any of these diseases was recorded in the City of London; among the metropolitan boroughs they caused the lowest death-rates in Chelsea, City of Westminster, Wandsworth, Deptford, and Woolwich; and the highest rates in Paddington, Fulham, Finsbury, Shoreditch, Poplar, and Battersea. The two fatal cases of small-pox both belonged to Lewisham. The 228 deaths from measles were 86 below the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Paddington, Fulham, Holborn, Shoreditch, Stepney, Poplar, and Battersea. The 38 deaths from scarlet fever showed a decline of 14 from the average number in the corresponding periods of the ten preceding years; the greatest proportional mortality from this disease occurred in Hampstead, St. Pancras, Finsbury, Shoreditch, Stepney, and Lewisham. The 36 fatal cases of diphtheria were only a little more than a quarter of the corrected average number; among the various metropolitan boroughs this disease was proportionally most fatal in Fulham, St. Pancras, Bethnal Green, Bermondsey, and Greenwich. The 212 deaths from whooping-cough were 23 fewer than the average number in the corresponding periods of the ten preceding years; this disease showed the greatest proportional mortality in Hammersmith, Finsbury, Shoreditch, Poplar, and Southwark. The 19 fatal cases of "fever" showed a decline of 11 from the corrected average number; three of the deaths belonged to Islington, three to Woolwich, and two each to Kensington, Hackney, Stepney, and Southwark. The 86 deaths from diarrhœa were 13 in excess of the average number in the corresponding periods of the ten preceding years; this disease was proportionally most fatal in Fulham, City of Westminster, Holborn, Bethnal Green, and Stepney. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was more than 27 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 102 per 1000. The lowest rates of infant mortality were recorded in Hampstead, the City of London, Wandsworth, Deptford, Greenwich, Lewisham, and Woolwich; and the highest rates in Kensington, Chelsea, Islington, Finsbury, Shoreditch, and Poplar.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeon J. Lowney to the *Dominion*, temporary. Surgeons: C. M. Woods to the *Pembroke;* J. G. Peebles to the *Victory;* T. W. Myles to the *Virid*, additional, for disposal; F. F. Lobb to the *Albemarle;* and H. C. Woodyatt to Royal Marines, Plymouth.

ROYAL ARMY MEDICAL CORPS.

Major J. D. Ferguson, D.S.O., is appointed Instructor and second-in-command of the Depôt Training School at Aldershot, vice Major F. J. Greig, who is posted to Stirling for duty. Major H. J. Parry, D.S.O., Assistant Instructor and commanding A Company, is to be succeeded by Captain J. D. G. Macpherson, now under orders for Aldershot. Captain F. Ashe is appointed for duty with the 5th Division at Dover. Captain G. G. Delap, from Poona, and Lieutenant G. W. Heron are appointed to the London District for duty.

Lieutenant-Colonel J. G. MacNeece to be Colonel, vice W. O. Wolseley, deceased (dated June 4th, 1905). Lieutenant-Colonel D. Semple retires on retired pay (dated June 14th, 1905). Lieutenant G. W. Heron, from the Seconded List, to be Lieutenant (dated June 2nd, 1905).

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain H. T. Challis to be Surgeon-Major (dated May 27th, 1905). Surgeon-Lieutenant C. R. Browne to be Surgeon-Captain (dated May 28th, 1905).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Ayrshire and Galloway: Surgeon-Lieutenant A. Young resigns his commission (dated June 10th, 1905). 1st Fifeshire: Honorary Assistant Surgeon J. Welsh resigns his appointment and is granted the honorary rank of Surgeon-Captain with permission to wear the prescribed uniform (dated June 10th, 1905). 1st Lancashire: Surgeon-Major T. M. Dawson to be Surgeon-Lieutenant-Colonel (dated June 10th, 1905).

Rifle: 1st Volunteer Battalion the Royal Fusiliers (City of London Regiment): Surgeon-Captain H. G. Thompson (Brigade-Surgeon-Lieutenant-Colonel, Senior Medical Officer, 1st London Volunteer Infantry Brigade), to be Surgeon-Major (dated Sept. 4th, 1901). 1st (City of Dundee) Volunteer Battalion the Black Watch (Royal Highlanders): Surgeon-Major D. Lennox is appointed Brigade-Surgeon-Lieutenant-Colonel, and is borne as Supernumerary whilst holding the appointment of Senior Medical Officer of the 34th Field Army Brigade (dated June 10th, 1905). 1st (Renfrewshire) Volunteer Battalion Princess Louise's (Argyll and Sutherland Highlanders): Surgeon-Captain J. N. Marshall resigns his commission (dated June 10th, 1905).

DEATHS IN THE SERVICES.

Surgeon-Major-General John Warren, A.M.S., on June 4th, in his seventy-first year. He entered the service as assistant surgeon in 1857, was promoted surgeon in 1873, surgeon-major in 1873, deputy surgeon-general in 1883, and surgeon-major-general in 1893. He was in medical charge of the 15th Hussars in the Afghan War of 1878–80, including the advance to Khelat-i-Ghilzie and with the Thull Chotiali Field Force under Major-General Biddulph (medal). In the Egyptian War of 1882 he was in charge of No. 5 Moveable Field Hospital (medal and Khedive's star). He also took part in the Soudan Campaign in 1885 (mentioned in despatches and clasp). He retired in 1896.

Colonel William Owen Wolseley, R.A.M.C., on June 3rd. He joined the service as surgeon in 1880, became surgeon-major in 1892, brigade-surgeon in 1898, and surgeon-colonel in 1903. He served in the expedition to Ashanti under Sir Francis Scott in 1895 (promoted, bronze star). In the operations on the North-West Frontier of India, 1897–98, he was present with the Kurram Moveable Column, Tirah Expeditionary Force (medal with two clasps).

LORD ROBERTS'S APPEAL.

Lord Roberts has recently addressed an appeal to the nation for funds for providing a large extension of the system of rifle clubs. Why should not rifle-shooting and the use of the rifle be made a national pursuit and accomplishment? Indeed, being a matter of national importance, why should not the Government do its best to aid such an undertaking? Lord Roberts very pertinently points out that the independence of a State must rest not only on the willingness but on the ability of a nation to defend itself. He cites in illustration of this position his experience of what occurred in our late war in South Africa; and we may also call attention to the achievements of the Japanese in the present war in the Far East. The hatred of so-called "militarism" in this country, which is in itself perhaps a wholesome feeling, may be easily turned into an excuse for shirking an obvious duty. For ourselves we venture to think that it is not only right that there should be some system of obligatory military training on the part of the youth and young manhood of this country, but as medical journalists we hold that it would prove very beneficial from a hygienic and moral point of view. Little or nothing is done for the physical training of the young in this country, and there can be no doubt that a military training of some sort improves the health and physical vigour, while the discipline tends to develop the intelligence and to strengthen the manhood and character of a people.

PATHOLOGICAL EFFECT OF SHELL FUMES.

Dr. Ignatius Much, in a description of a *sauve qui peut* at the battle of Mukden, which he contributes to the *Kurj Warsz*, speaks of an intelligent soldier who was brought down by the fumes of a shell that exploded near him. When picked up he was found to have lost his sight, hearing, and speech. He is now partially restored to health. He sees, hears, and feels, but cannot speak.

THE WAR IN THE FAR EAST.

That Russia is willing to open negotiations with Japan is the great and absorbing news at the present time. It is, of course, quite premature to say that these negotiations will be the prelude to peace, but it is, at any rate, of hopeful augury that such may be the case. The continuance of a war marked by such recurring massacres and involving such wholesale suffering and financial losses as have attended the naval and military operations in the Far East has been growing more and more repugnant to the human conscience. The possible dawn of peace is consequently hailed on all sides as an event most devoutly to be desired. President Roosevelt has, by his able and tactful diplomacy, earned the gratitude of the civilised world by having initiated a hopeful movement in this direction. As regards the terms of any proposed settlement, there is in the meantime room enough for all kinds of conjectures and we may be sure that many will be put forward on which little or no reliance can be placed. All the world knows, however, what the defeats and losses have been on the side of Russia and the great successes which have attended the efforts of the Japanese to attain their end. We do not know how far the Czar and his Government may be influenced at the present time by the internal state of Russia, her finances, and the amount of sickness in her army in Manchuria, but that in any case Russia will have to face and to deal with the facts as they now stand is obvious. It is only fair to say that the Japanese policy has not hitherto been one of bluff and aggression but the Mikado's Government is nevertheless bound to secure as far as practicable a durable peace and to recuperate itself in some measure for the enormous sacrifices of life and money which it has incurred in this war. Beyond the fact that Admiral Rojdestvensky is progressing satisfactorily there is no medical news to record, nor is there likely to be any so long as everything is dominated and overshadowed by the hoped-for news regarding a prospect of peace.

Correspondence.

"Audi alteram partem."

THE MEDICAL MAN, THE CORONER, AND THE PATHOLOGIST.

To the Editors of THE LANCET.

SIRS,—In both the medical and lay press there has been lately much discussion concerning the practice introduced by a certain coroner of giving all medico-legal post-mortem examinations to a special pathologist. The Government of India has for many years recognised the value of this method and in Bombay and Calcutta the police surgeon does all post-mortem examinations of cases reported to the coroner. It is upon this report that, as a rule, the coroner decides whether it is necessary to hold an inquest. He sends in a written report of the post-mortem examination to the coroner which forms the basis of his evidence subsequently given on oath in the coroner's court. There is no question of fees as the coroner's surgeon receives a fixed salary. He is also lecturer on forensic medicine at the Calcutta Medical College, and the bodies sent to the morgue are used for the practical instruction of the senior students. I have held the post of coroner's surgeon during the past two years and during that time have made something like 400 post-mortem examinations, including numerous cases which were of great medico-legal interest. I am convinced that the ordinary practitioner would have found great difficulty in dealing with many of these cases which required not only knowledge of medical jurisprudence but also experience. To apply a phrase originally used in connexion with a totally different branch of human energy: a man is not necessarily making a post-mortem examination because he is cutting up a body. I will not go into details but will give one instance to explain what I mean. In cases of injury to the head it is better to examine the skull and brain before the thorax has been opened and the large veins severed. Those who only work from book knowledge would begin the body incisions under the usual directions given for making a post-mortem examination. Another important point concerning which the ordinary practitioner has little or no experience is the effect produced on the tissues by various poisons. The coroner's surgeon will, of course, have the assistance of an analyst in such cases, but in many cases he has to decide whether the appearances presented in the body before him point to poisoning and whether he ought at once to seal up the stomach, &c., ready to be sent to the analyst. Upon the post-mortem report many serious issues depend; often it is a matter of life or death to an accused. It stands to reason, therefore, that it is safer to employ a special pathologist with experience of many cases than to allow each post-mortem examination to be made by a different medical man and often, of necessity, by a medical man who has only made one or two such examinations in his lifetime. Another

reason for employing a special pathologist is the experience which he gets in the matter of giving medical evidence in simple language so that it can be easily understood by the laymen composing the coroner's jury. Many men who can explain the results of a post-mortem examination in technical medical terms often fail to convey a clear idea of the important points to the jurymen. This point is of even greater importance when the case passes from the coroner's court to one of the higher courts of justice.

A third reason which I think is in favour of the new plan is the protection it offers to the public. Many of the bodies upon which post-mortem examinations are made are in a state of decomposition and highly septic. As the coroner's surgeon in Calcutta is not allowed to engage in private practice there is no danger of his carrying infection to anyone else—a danger by no means absent when the post-mortem examination is made by a general practitioner who goes from the mortuary to visit his patients. The question of fees or expense is not one that should be allowed to enter into a discussion of such general and scientific importance and a general practitioner ought not to feel hurt because special work is given to a man who is willing to devote himself to what, after all, is not a very pleasant occupation.

I am, Sirs, yours faithfully,

J. H. TULL WALSH,
Lieutenant-Colonel, I.M.S.

Old Catton, Norwich, June 12th, 1905.

To the Editors of THE LANCET.

SIRS,—As a spectator at a recent inquest held by Mr. Troutbeck at Wandsworth I was painfully impressed by observing the feeling that has arisen in South London between the coroner and the local profession. A crowded court, the presence of two solicitors, two counsel, numerous medical practitioners, and an adjourned inquiry, which lasted nearly three hours, would seem to point to a matter of grave public importance. The inquest was, on the face of it, to find out whether a child had died from pneumonia or whether the death had been accelerated by an overdose of morphine in the medicine prescribed, but the coroner suggested that his own conduct in not ordering the practitioner in attendance on the deceased to assist in making the necropsy was not the least of the matters imported into the case. The medical interest lies entirely in the attitude assumed by Mr. Coroner Troutbeck. He asserted he was not fighting the medical profession, though the presence of counsel instructed by the British Medical Association, the honorary secretary of the Medical Defence Union, and many medical practitioners in sympathy with Dr. Miller hardly supported his statement. But this was explained by him as due to the action of certain medical societies whose paid officials found it necessary to find something to show a reason for their existence. He never refused to summon a medical witness if he thought his evidence would be of any use but he could not often ascertain its value before the opening of the inquest. Might this not be in consequence of the attitude Mr. Troutbeck has assumed? In other parts of the county of London coroners do not seem to have the same difficulty. Where he considered good might arise he was never unwilling to order the medical attendant to assist in making the necropsy. The medical profession considers it advisable in all cases that the clinical observer of the latest phase of the deceased's illness should so assist, but Mr. Troutbeck thinks otherwise. His views of the capacity of the ordinary medical practitioner are, to say the least, not flattering. As clinical evidence can only be furnished by his class clinical evidence is to be depreciated as much as possible. For what other reason could such evidence be preferred second hand? In putting to the jury the one important question, viz., the cause of death, Mr. Troutbeck laid down that the jury were to take the evidence of Dr. L. Freyberger that the clinical symptoms observed by Dr. Miller were consistent with natural death rather than that of the latter that they were inconsistent. Why were the jury necessarily to take Dr. Freyberger's opinion on this subject? Dr. Freyberger had previously stated that if the deceased had actually taken the quantity of medicine sworn to by the mother he could not "dissociate" that fact from the cause of death. The coroner had himself said he did not believe the later statement of the mother, that no more than five teaspoonfuls had been administered. It would have been thought that this opinion of Dr. Freyberger was strongly confirmatory of Dr. Miller's clinical observations.

Anyway, to put to the jury the opinion of a medical witness touching clinical phenomena when he had not been present in preference to that of one who had is treating clinical observations with scant respect, and in this particular case the question the jury had to try rested almost entirely on what might have been observed during the last few hours of life. The post mortem results were bound to be negative, as the quantity of morphine taken was admittedly small. The most important points for the jury, in my opinion, were these: A child had died who, in the opinion of the medical attendant, was suffering from narcotic poisoning; that attendant noticed at the bedside a bottle of medicine which was proved to contain morphine and out of which at least 20 teaspoonfuls had disappeared, instead of two or three, as had been ordered. The mother swore that she had administered practically this quantity. The pathologist stated that if these 20 teaspoonfuls had been given he could not "dissociate" it from the cause of death. Dr. Miller gave evidence that in his opinion the latest condition of the deceased was only consistent with narcotic poisoning. On these facts the jury found that the death was entirely due to natural causes. It might surely be argued by some that the verdict was against the weight of evidence and that there had been misdirection on the part of the coroner.

I am, Sirs, yours faithfully,

June 13th, 1905. BARRISTER-AT-LAW.

*** Colonel Tull Walsh hardly realises the situation which has prompted him to write an interesting letter. No sensible people object to the employment of a special pathologist in suitable cases at a proper fee. But the pathologist should be a proved expert, the public should not be made to pay for him when his services are quite unnecessary, and his evidence should not be regarded as replacing the clinical evidence of the medical practitioner last in attendance upon the case, a point well brought out in "A Barrister-at-Law's" letter.—ED. L.

THE PRINCIPLES OF HEREDITY.

To the Editors of THE LANCET.

SIRS,—Interesting as is Dr. Archdall Reid's new work I cannot but think it would have been more convincing had he refrained from divulging the data and reasons upon which he bases his theory. Arguments like the following are too frequent: "It—i.e., the neo-Darwinian theory of evolution by natural selection—infers that *as a rule* individuals who survive and have offspring are those which are better fitted to the environment in which they are placed than those which perish." Now, the sole criterion we have as to the fitness of an organism for its environment is by its continued existence. Hence the statement amounts to this: that as a rule individuals who have the best chance of surviving survive and those with the least chance perish.

Dr. Reid's views on alcohol are generally known; Landor well anticipated them in the words he puts in the mouth of Sergius in his conversation with Mahomet, "Forbid wine, indeed! God himself, if he descended on earth and commanded it in a louder and clearer voice than that at which the creation sprang forth, unless first he altered the composition both of body and soul, would utterly fail in this commandment." Many of Dr. Reid's observations in so far as they relate to Jews and some other races are, I believe, incorrect. Briefly put, he contends that the Jews are, with impunity, moderate drinkers because all those likely to suffer have been eliminated by natural selection. It is true that a Jewish abstainer is quite the exception and that among the older generation drunkenness is rare; however, among the younger generation of English-born Jews, at any rate, it is by no means uncommon and its effects are precisely the same as among other persons. I have had under my care Jews suffering from dipsomania, delirium tremens, and other pathological conditions due to alcohol. When exposed to modern industrial conditions—to avoid controversy, I shall not say because of them—the Jew quite readily assimilates to his Gentile surroundings in this and other respects. In other words, so far as the Jew is concerned he has been sober by "acquirement" and can at any time "acquire" alcoholism. There is no question here of elimination nor, indeed, of any transmitted effects of

alcohol to the off-spring. My experience of a South European race hardly tallies with Dr. Reid's. The descendants of the Spaniards in South America—I confine myself to those of unmixed descent—drink because of the "cerebral" effect, to adopt the author's classification. Drunkenness is very prevalent among them and, if I may say so, is usually of the noisy Anglo-Saxon variety, nor do the pathological effects differ very greatly in the two peoples.

To turn to parasitic diseases, Dr. Reid suggests that the result of natural selection against malaria has been considerable by killing off a large number of the naturally susceptible. In this way he accounts for the relative immunity of the negro to this disease. If so, the English should be almost malaria-proof. Until quite recently malaria was very prevalent in our island, now it is nowhere endemic in it. Varieties of anopheles mosquitoes capable of acting as hosts to the parasites still abound here. There is nothing to suggest that the parasite that once flourished here was different from that now existing in other countries. Presumably, then, the malarial organisms died out in England because they had exhausted their food-supply—i.e., all the susceptible English had perished. Our colonial experience, however, shows that Englishmen are not immune to this disease as they should be by a logical deduction from Dr. Reid's argument.

Plague has been endemic in the East from a remote period and hardly bears out Dr. Reid's contention that parasitic diseases are less terrible when endemic than when epidemic. In Dr. Reid's sense they cannot be both at the same time. Surely the native populations should present some degree of immunity by now, but for the week ending April 27th there were 56,732 deaths. Possibly Dr. Reid would consider evolution, in this instance, is now in the making.

With regard to measles we might expect natural selection to show signs of its work in this country. But measles continues responsible for the largest number of deaths among children. Elimination by natural selection will not account for the varying susceptibility of different races under similar conditions to a newly introduced disease. The following incident is an illustration. A Bolivian garrison on the Upper Amazon to which I had been sent as medical officer was besieged for six months. The garrison consisted originally of some 350 Bolivians, mainly Indians, and some 40 civilians, North Americans, Italians, Swiss, &c. Beri-beri broke out during the siege, a disease unknown both to the Indians who were from the Bolivian high lands and to the Europeans. Although all were exposed to similar conditions, insufficient food, sleep, &c., over 100 of the Indians died, whilst of the Europeans only one had it (mildly) after having been taken prisoner and severely ill-treated.

It is hard to reconcile some of Dr. Reid's theories with the law of parsimony in nature to which he frequently refers. Surely it must be wasteful for the race to possess a taste for alcohol and then to have to weed out those whose taste is too highly pronounced. Dr. Reid does not apparently contend that a taste for alcohol is necessarily correlated with mental or physical superiority. He says: "Englishmen, Frenchmen, Germans, Chinamen, and Japanese are certainly not inferior physically or mentally to the lowest New World savages"; but he does not attempt to prove that this non-inferiority is due to the former's long use of narcotics. Even the inference he would draw that this has not been a disadvantage is incapable of proof. Supposing someone suggests—I do not—that had these races abstained from narcotics they would have already risen to the superman of Nietsche. Dr. Reid has given so little space to the relation of the germ plasm to environment as to lead one to infer that he would ignore all recent embryological research, all the informative work of Roux, Driesch, Herbst, and others in Germany; of Loeb, Morgan, and that school in America. (By the way, the Royal College of Surgeons of England likewise appears to deem this work of little value, if one may judge by the absence of Roux's "Archiv für Entwickelungsmechanik der Organismen" from the library and by being told that there is no likelihood of its being placed there. In these archives are appearing the data for a theory of heredity!) As regards the practical application Dr. Reid would make of his principles, most biologists would probably agree with Mr. Wells and Mr. Shaw that the facts are at present too uncertain to admit of use. There is a plausible air of scientific thoroughness in the suggestion to sterilise the insane. Further research may show such a measure to be wicked and wasteful. Probably the insane are rather made than born. Was not tuberculosis considered an inherited disease until quite recently? Again, Dr. Reid should rather welcome prohibition than oppose it as futile; does he not show that prohibition increases drunkenness, thereby, according to him, more rapidly eliminating the drunkard?

I am, Sirs, yours faithfully

Commercial-road, E., June 4th, 1905. M. D. EDER.

"TRANSCENDENTAL MEDICINE."

To the Editors of THE LANCET.

SIRS,—In these days, when the enormous quantity of professional literature which appears every year makes it sufficiently hard for the busy medical man even to keep abreast of his own subject, books bearing on other subjects, and especially religious ones, are likely to be neglected. It is probable that very few of the readers of THE LANCET have turned their attention to the Gifford lectures of two years ago, given by Professor James of Harvard, for their title, "Varieties of Religious Experience," would not lead one to expect to find in them much of direct interest to the medical mind as such. It seems to me, however, that they well merit study by the profession and especially by those members who are occupied with mental diseases and those whose own minds turn not unwillingly in the direction of the unexplored fields into which science is gradually pushing its way.

From the earliest times, through the days of the Greek philosophers and right up to our modern spiritualists and faith-healers, there has always been an inextinguishable tendency in many, not by any means insignificant, minds to look on man and the world round him as a more complex machine than at first sight appears. And not only complex in the way in which the microscope shows it to be complex, but as containing elements not dreamt of in our philosophy. Plato, with his interpenetrating spheres of mind and matter, the spiritualist with his spirit world—not separated in space, but here, all round us—both embody the same idea.

In these days of scientific progress we are inclined to sniff at such ideas—the more so that the great achievements of later years tend to give us a feeling that it is only a question of a little while and we shall find what we are all, unconsciously if not consciously, seeking—the secrets of life and consciousness and all the riddles which are bound up with them. We feel that with such a well-engineered road stretching forward for us to travel along it is foolish to think that we can better things by leaving it and trying other roads which we have grown up to consider as exclusively used by cranks and ignorants. For of most of the writers on these subjects we have either never heard or only heard disparagingly, while the modern writers on "psychology," so-called, mostly start with the unalterable premiss that a brain cell, or at any rate a unit of protoplasm, is the final agent in all the processes of mind or amentia. True, Myers in his powerful book on "The Human Personality" would lead us in other directions, but the name of psychical research is not attractive to many of us, though our judgments on the subject are for the most part very insufficiently considered. For this there is excellent reason—namely, that no collection of material on the other side has ever been made and the "scientific" method of disproof has chiefly consisted in disproving a thesis here and there and ignoring those which it cannot disprove on the ground that the defendant's character has been sufficiently damaged for further argument to be unnecessary.

Here, to my mind, comes in the value of Professor James's work: the work of a professor of philosophy at a great university, chosen for the honourable post of Gifford lecturer in a land which is not his own. Moreover, his materials are collected and his arguments marshalled with other objects in view than those for which we shall find them of interest. It is nominally, and also in fact, a study of religious experiences drawn from various sources, the biographies and other writings of such men as Luther, Fox the Quaker, Tolstoi, Emerson, as well as others less known. Still, entangled, as it were, among the religious experiences are accounts of physical and mental conditions, and as we follow his analysis with an open mind the suggestion rises in us that after all many of the strange conditions are quite as well explained by the supposition that there is something round us of which we are unaware in our ordinary condition of robust health—that man is really something more than a physical body and brain in which certain physical

or chemical changes take place fundamentally, resulting in all the varied evidences of life and thought which we know so well that we hardly consider how wonderful and inexplicable they are—as by our own theories which, after all, can hardly in most cases be looked on honestly as more than very promising infants. We find ourselves thinking as we read of the religion of healthy-mindedness and the sick soul (if we ever happen to have come across the material on which to think), May not man really be in some way multiple? May he not have a body, soul, and spirit, as St. Paul said, and as we repeat not unfrequently, though with no sort of notion of what we mean by it? May not this body be, as it were, only a section of him and may not his other parts be conscious in varying degrees of what is happening in their worlds, to be made happy or miserable thereby, just as, even with our eyes shut, we are happy in the sunshine and miserable when the snow wind blows?

It is such an unfamiliar idea that we are almost afraid of it—afraid that we are losing our self-control in permitting these vague imaginings. Still, it is at least curious how the various ideas on the subject in different ages and peoples coincide. A very strange little book by a Mr. Leadbeater called "The Astral Plane," containing much of a startling and blood-curdling nature, seems in parts curiously in keeping with many of the facts, hardly less curious, presented to us by Professor James, as well as our own experiences of delirium, &c. A small portion of the lectures deals with mind cures and though containing much which closely resembles what we have read elsewhere and often smiled at it is well marshalled and critically considered. It is, of course, much easier for us, situated as we are, to conceive that a disease of the liver produces strange results by means of some ferment, alkaloid or internal secretion (though even so we have only moved things one step further away into the vague unknown land), than that it has affected one of our "other bodies" through its intimate connexion with them. Still, it is curious, nevertheless, to find in the literature of the subject on the intangible side that the liver has always been considered to be very closely connected with our unseen bodies. However averse we may be from accepting these views, which we have learned to regard with contempt, I think that the study of religious experiences gives us an undefined feeling of something more extensive in the composition of man than we are in the habit of admitting. Without by any means at once accepting all the marvels of the land across the border we should, I think, not be doing ill to carry with us the recollection that such things have been considered true by great men in all ages and see whether our own experiences go to support or to weaken the belief. This is, after all, the really scientific attitude of mind, not that which, so satisfied with the modern progress, resolutely keeps its eyes fixed on the ground as it advances, ignoring perhaps valuable hints which it might obtain without ever leaving the road were it sometimes to take a glance at the sky and the country around it.

I am, Sirs, yours faithfully,

June 10th, 1905. CHEOPS, M.B.

DEATH CERTIFICATION.

To the Editors of THE LANCET.

SIRS,—Among other lectures delivered during the summer session at the medical schools in these kingdoms are those on medical jurisprudence, or, as it is also called, "forensic medicine." It may be profitable to draw the attention of professors, lecturers, and medical students to the all-important subject of the giving of medical certificates of the cause of death. It is more than 30 years since the Births and Deaths Registration Act, 1874, made it compulsory on all members of the profession, in their capacity of medical attendants on deceased patients, to give a certificate of the cause of death to some relative of the deceased or other person qualified to act as informant to the registrar of the sub-district in which the death took place. The details given in the medical certificate are duly entered in the register by the registrar, together with others given by the informant who signs the entry. This latter contains the name of the medical attendant as well as the cause of death. After the completion of his duty as registrar a certificate authorising the burial of the body of the deceased is given to the informant who gives it to the undertaker or directly to the officiating minister. It is a common practice for many persons to denounce our system as deficient because it does not enforce the due registration and certification of every death and is therefore imperfect. But it may be confidently asserted in answer to this objection that if each of the three persons whose duty it is to effect the registration—(1) the medical attendant, (2) the informant, and (3) the registrar—did his or her duty, our system would be absolutely perfect. Every medical practitioner and every advanced medical student ought to have at his fingers' ends the requirements of the law as given in the Act here quoted. Moreover, the proper filling up of death certificates should be systematically taught to every medical student before he completes his curriculum.

The second section of Clause 20, 37 and 38 Vict., ch. 88, is as follows: "In case of the death of any person who has been attended during his last illness by a registered medical practitioner, that practitioner shall sign and give to some person required by this Act to give information concerning the death, a certificate stating to the best of his knowledge and belief the cause of death," &c. Section 3 provides for the registration of deaths in case of inquests being held by the coroner, he furnishing the information to the registrar and a medical certificate need not be given. Of the total number of deaths which are annually registered in England and Wales more than 90 per cent. are medically certified. Between 5 and 6 per cent. are certified by coroners after inquests and the remaining small percentage is not certified. From time to time the Registrar-General has occasion to complain of incomplete and otherwise imperfect certificates which are returned to the certifiers for correction; it is satisfactory, however, to add that these are becoming fewer every year.

Now it must be distinctly understood that a medical attendant is not justified in filling up and signing the usual form of certificate furnished by the Registrar-General unless he is satisfied that the death was due to natural causes and that the certificate is one which the registrar can act upon. The Act of 1874 in its 39th clause admits reasonable excuse as exemption from penalty. Moreover, since this Act was passed the Coroners Act, 1887, defines those cases in which the coroner shall hold an inquest. Section 3 is this: "Where a coroner is informed that the dead body of a person is lying within his jurisdiction and there is reasonable cause to believe that such person has died either a violent or an unnatural death, or has died a sudden death, of which the cause is unknown." It is clear that the only person who can inform the coroner on these points is either the medical attendant during the last illness or the medical practitioner who is the first to see the body after its discovery. In either case the medical practitioner should inform the coroner without any delay which in cases of foul play by poison or otherwise may lead to a gross miscarriage of justice and other serious consequences. A violent death includes one in which death follows some time after the accident or act of violence, the discretionary power being the privilege of the coroner and not of the medical attendant.

The responsibility placed on medical practitioners and the confidence reposed in them by the public are very great, hence the paramount importance of every student being taught and every practitioner duly considering whether he ought to give or to refuse a certificate of death. In addition to the large class of cases in which a certificate may safely be given and the smaller number in which one will not be asked for there is a third class of what may be called doubtful cases. Cases of gastro-enteritis resemble those of irritant poisoning, while cases of poisoning by strychnine have been mistaken for convulsions arising from natural causes. Hence the importance of students attending diligently the lectures on toxicology, learning how to distinguish symptoms of natural disease and of poisoning, and also how to employ the Marsh and Reinsch tests to urine, vomited matters, stains, &c. It is a melancholy fact that since the Coroners Act of 1887 became law cases of wholesale poisoning have occurred in which medical certificates have been given most improperly. In one the surgeon filled up the usual form although he had not attended the deceased at all. It was in consequence of this that the Registrar-General's form of certificate was altered, the word "alive" being given before the date of the last visit. In addition to this every form has on it a printed capital letter and number and every practitioner before filling up and signing one should remember the ancient

saying, "Litera scripta manet." Death certification is a thankless and generally a wholly unremunerative duty.

I am, Sirs, yours faithfully,

June 9th, 1905. A PROVINCIAL SURGEON.

VISIT OF BRITISH PHYSICIANS AND SURGEONS TO PARIS.

THE EXCURSION TO EVIAN-LES-BAINS.

(BY ONE OF OUR SPECIAL COMMISSIONERS.)

IT is a long journey from Vichy to Evian. We had a special train, an express train, that only stopped on rare occasions and was not delayed by the taking up or setting down of passengers. We started shortly after 3 P.M. and yet it was close upon 11 at night before we reached Geneva. The time nevertheless passed pleasantly and therefore quickly. Also, there was tea served in the train and later a very excellent dinner, so that it was no great hardship to be confined with agreeable company under such hospitable conditions. At Geneva there was only just time to drive to the hotels allotted to each of us and to seek much-needed rest. Next morning we had to be up early, for a special and large steamer, gaily bedecked with innumerable flags, was waiting and announced to start at 9 o'clock. The weather was cold and the sky was cloudy, but fortunately it did not rain, so that the visitors were able to stay on deck. Though Mont Blanc and the snow-clad Alps were hidden from view, still the nearer scenery and the lake itself were very beautiful. It was also a good idea to convey us to Evian by water, for this thermal station is seen to much greater advantage from the lake. Indeed, the principal impression is that of the favoured site occupied by the little town. It is situated on the edge of a vast amphitheatre formed by mountains and bordered by the lake. The old town itself is very small. Savoy is the poorest department of France, so that the old houses of Evian are picturesque rather than prosperous in appearance, but they are to a large extent hidden by the great and luxurious buildings connected with the springs. There still remain, however, six towers that formed part of the mediæval fortifications and these add greatly to the picturesque aspect of the place. Even from those times records have been preserved that show the waters were drunk as a cure for gravel and, further back in history, that they were appreciated by the ancient Romans. Nevertheless, it is only of late years that Evian has become a great international station attracting patients from all parts of the world. The modern growth and development of Evian may best be realised by glancing at the statistics. Thus in 1891 the number of bottles of Evian water sold amounted to 761,909; in 1895 this had increased to 1,478 477; in 1900 to 3,725,000; and in 1903 to 4,917,584. Every year new buildings are erected or old ones are enlarged. The great hotel and the vast bathing establishment still gleam and shine with their newness. Indeed, it is a relief to find that there are also close at hand some ancient tumble-down houses and cottages the walls of which are grey and mellowed by age and where all trace of polish had long since been worn away.

On landing our first visit was to the bathing establishment which, having been built quite recently, contains the very latest improvements. One special feature is that each bath room is divided into two compartments. The outer compartment is the dressing room and each dressing room has its own closet, so that there is no need to go down long corridors in a state of deshabille. Except for douches the patient undresses by the side of his bath. Provision is made for every sort of hydropathic treatment and there are also the necessary appliances for Dowsing and other light baths, and an x ray department. Then there is a staff of experienced masseurs and there is a room for mechano-therapy as at Vichy.

After visiting all the baths and the pump room where the patients go to drink the waters the visitors ascended the hill-side to the Hôtel Splendide where a banquet had been prepared which was followed by many speeches and toasts. Among the first to speak was Sir JOHN W. TYLER who responded to the official toasts and then called upon Mr. G. A. BERRY to speak at greater length as he had a good command of the French language. Among other observations Mr. Berry said that there had been many international congresses but this gathering would become historic. They had enjoyed all the advantages of a congress and none of the disadvantages. They had exchanged ideas, they had talked over matters of mutual interest, but there had been no wearisome and formal debates.

Sir JOHN W. MOORE, on behalf of the Irish medical men, wished to express his thanks. He was particularly grateful to the ladies who had acted as hostesses. The success of the journey had exceeded all their hopes. They would never forget the days they had spent in beautiful France and the grace and the charm of their French sisters.

This speech brought up another Irish orator in the person of Mr. ARTHUR CHANCE, President of the Royal College of Surgeons in Ireland. It was on behalf of the Irish surgeons that he was anxious to express his thanks, and this not merely for the reception which they had had but more especially for what they had been able to see of the work done by the French surgeons in the French hospitals. Here they had admired and learnt much. Altogether the reception given was worthy of the nation and he could not say more. The French had taught them the significance of one of the words on their proud device. The British visitors now understood what was meant by "Fraternity." He raised his glass to that incarnation of hospitality, the general secretary of the receiving committee, Dr. Triboulet. Though the Irish were divided from France by two stormy seas a love founded on historical facts united them. Strong and ancient ties of affection subsisted and he hoped that French medical men would frequently visit Ireland. The whole heart of the Irish people would go out to greet them.

The MAYOR OF EVIAN, M. RICHAT, expressed the hope that those whom he had the pleasure of welcoming on the present occasion would come back again to Evian and at no distant day. They would then see by the improvements effected year after year that the municipality and inhabitants of Evian did not tire in the endeavour to do good.

Dr. DUMUR, on behalf of the medical practitioners of Evian, drank to the British medical men and Dr. GAUTIER repeated the same toast on behalf of the medical practitioners of Geneva. Then, amid general applause,

Dr. TRIBOULET rose to reply and complained that too much had been said in his honour, and time did not allow him to explain in detail how all this honour, all these praises, should be divided among various different persons and different periods. It did not all come about spontaneously and simultaneously. There were modest beginnings and early efforts that should not be forgotten in the glow of the after success. What would have become of the idea if it had not been taken up in England by an English committee which gave them all an admirable lesson in discipline and in business-like qualities. It was the British organisers of the reception of the French medical men in London who had revealed the secret of success. The joy expressed by the British visitors to-day was the best recompense of the French organisers for having well learnt their lesson. He was aware that on all sides the satisfaction had been great and one of the reasons for this was that they had realised that for such undertakings it was essential to be not too young nor yet too old. Thus on the present occasion they had united the buoyant energy of Sir William Broadbent with that glorious example of perpetual youth presented by Professor Bouchard. But all these efforts on the part of individual members of the medical profession would not have met with the general support that had made their strength if they had not been seconded at every step by widespread publicity. The medical press had not only made known their desires and their invitations to all whom it might concern, but they could not forget the brilliant reception given to the French medical men in London by THE LANCET. He was glad to see present a representative of that great journal. He raised his glass in gratitude to the medical press.

Mr. ADOLPHE SMITH, who responded, said that he was pleased that the services of the press had been acknowledged. It was very easy and pleasant to-day to speak of *l'entente cordiale*, but there had been times when this cause was not so popular. There were unhappy moments when the political press was rendering but poor service to the cause of humanity by venomous comments on whatever misunderstanding or disagreement had arisen between nations. During these dark periods the scientific press continued as usual, speaking of the scientific attainments of their neighbours just as if there were no quarrel or disagreement in existence. This calm superiority

of science in its love and devotion to humanity—a devotion that no political squabbling could disturb—served to steady the ships of State, storm-tossed by the fleeting passions of peoples and politicians. This internationalism of science occupied a large space in the columns of THE LANCET and it had done more than promote scientific knowledge, for it had helped to maintain peace.

The whole party then proceeded to visit the model works recently constructed for bottling the Evian water. Here the most ingenious and the latest mechanical devices have been introduced. The bottles are washed and cleaned by machinery and it is so arranged that there is no risk of any sort of dust or dirt entering. Once the inside of the bottle has been washed no hand touches the neck until after the bottle has been filled and corked. The man who handles the corks wears india-rubber and sterilised gloves and is very carefully watched to see that he does not remove these gloves. To get such machinery as will prevent all necessity of handling the bottles was a very difficult matter and the present perfection in the process was only attained three years ago. Now it is possible to fill 17,000 bottles in a day. Soon a duplicate set of machines will be obtained and thus it will be easy to double the output. By such means it will no longer be necessary to keep the work going through the night as is at present the case during the summer months.

The party then returned to the steamer and spent the rest of the afternoon visiting the other and farther end of the lake. They passed in front of Montreux, then close under the grey walls of Chillon, duly recalled Byron's homage to Bonnivard, and subsequently saw the arrowy Rhone flow placidly into the lake. It was a very enjoyable afternoon. On returning to Evian dinner was awaiting and soon afterwards it was necessary to rejoin the special train which had come from Geneva to fetch us. A little after eight we started on the uninterrupted run to Paris, which was reached a little before eight the next morning. Thus on Wednesday morning, May 17th, the party, after spending precisely a week together, finally dispersed.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The Medical Benevolent Society.

THE annual meeting of the above society took place on May 30th, under the presidency of Dr. E. Malins. The eighty-third annual report was read and adopted. The funds of the society now amount to £15,695 19*s.* 5*d.* 22 annuitants were on the books at the beginning of 1904, two died during the year, one made no further application owing to his improved financial position, and four new annuitants were added. The sum disbursed during the year was £797 10*s.*, in grants ranging from £20 to £40. In order to meet the heavy demands upon the funds of the society the directors decided to make a reduction of 10 per cent. on all annuities. This reduction comes into force in 1905. Complaint was made that the society is not supported as it should be by the practitioners of the district for whose benefit the society was originated; that whereas there are about 4000 practitioners in the district there are only 414 benefit members. There can be no doubt that considering the good work the society is doing and the quiet help which is given in cases where it is deeply needed the society is deserving of much more general support. Dr. Arthur S. Underhill was elected president for the ensuing year.

Birmingham and the Housing Question.

A provincial sessional meeting of the Royal Sanitary Institute was held in Birmingham on May 27th to consider the housing question. Dr. J. Robertson, the medical officer of health of the city, read a paper dealing with the problem, in which he recommended the building of workmen's dwellings in suburban areas and the provision of better transit. Alderman Cook, the chairman of the health committee, was of opinion that the solution of the housing question would mean a reduction in the infantile mortality and a limitation of the spread of tuberculosis. Other speakers recommended the institution of a black list containing the names of those tenants who did not observe the ordinary decency of life. The German method of buying up belts of land in the surrounding district and laying down the lines on which a city should be developed found many advocates. The Birmingham housing committee has decided to send a deputation to Germany to study the method and it is thought that Stuttgart, Frankfort, and Düsseldorf will be visited for this purpose. Birmingham has already made a commencement on these lines by the purchase of the Bordesley Green site for workmen's dwellings. There is also at present a proposal that Lightwoods Park, which has an area of 18 acres, should be extended, to include in all 45 acres, by the acquirement of the historic and picturesque Warley Woods and 12 acres of adjoining pasture land, the latter to serve as playing fields. Lightwoods Park being situated in a rapidly growing portion of the city its extension would afford adequate recreation and pleasure grounds for the inhabitants now and in the future. The amount required to cover the extension is £13,000 and several donations of £1000 each have already been made.

The Proposed Labour Colony.

At the last meeting of the conference which was called together to consider Mr. Fels's offer of land for a labour colony it was decided that Mr. Fels should be thanked for his kind offer and informed that no definite action in the matter could be taken until Parliament has dealt with the Unemployed Workmen's Bill.

The Education of the Blind.

A new kindergarten school for blind children, the first of the kind in the kingdom, has been opened at Harborne. It comprises class-rooms, play-rooms, dining-rooms, dormitories, sick and convalescent wards, cloak-rooms and boot-rooms, lavatories, bath-room, and linen-rooms. It has been built at a cost of £18,750, of which £15,300 have already been subscribed. It is proposed to confine it to children under 12 years of age. To show how much could be done in educating the blind it was pointed out that last year 634 persons were benefited, £3351 were paid in wages to blind teachers and workers, and goods were sold to the amount of £8441.

The Birmingham Health Committee and Midwives.

Four women reported under the Midwives Act by the medical officer of health appeared at the last meeting of the above committee to answer charges of various breaches of the rules of the Central Midwives Board. In one case the committee took so serious a view of the matter that it decided to report the woman to the Board. In another case the committee suspended for a time the woman concerned; the other two women were severely reprimanded.

Hospital News.

By the will of Mrs. Anne Maria Unite of Blackwall Court, Bromsgrove, £20,000 have been bequeathed towards the rebuilding and equipment of the Birmingham and Midland Hospital for Women. Although the hospital is almost rebuilt and will shortly be reopened, and although the money required has been largely subscribed, still much additional equipment will doubtless be necessary from time to time. The generous bequest further insures the hospital being opened free from all debt.—The Coventry and Warwickshire Hospital is shortly to undergo an extension. The existing portion is to be modernised and certain parts are to be demolished. The scheme embraces the provision of a new two-storey three-block building, a new operating theatre, kitchens, stores, mess-room, nurses' home, an out-patient and dispensary department, laundries, mortuary, and isolation block. There is to be a new ward pavilion of two storeys, each ward accommodating 24 beds. Cross ventilated lobbies and sheltered balconies will also be provided. The operating theatre will be equipped with all the latest improvements and will include an x ray and Finsen light room. Although the out-patients' department will be close to the main hospital the patients will be kept entirely separate from the main block. It is estimated that the cost will be £35,000. At the last meeting of the general committee of the hospital a communication was received from the solicitors of the late Mr. John Rotherham, for many years senior trustee of the hospital funds, stating that the deceased gentleman had left them a legacy of £1000. A letter was also read from Mr. E. T. Pierson, inclosing a cheque for £50 towards the extension fund "in memoriam of his late son, Captain A. E. Pierson," and promising a further donation of £100.—The governing body of the Guest Hospital at Dudley has decided to establish an ophthalmic branch and to appoint an additional honorary surgeon.

June 13th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Bequests to Medical Charities.

THE trustees of the late Mr. James Holden of Rochdale have made large grants to the following charities: The Rochdale Infirmary, for the Holden Wing, £18,000; the Manchester Children's Hospital, Pendlebury, £10,000; Ashton District Infirmary, £10,000; St. Mary's Hospital, Manchester, £10,000; Stockport Infirmary, £5000; Rochdale Children's Convalescent Homes, St. Anne's-on-Sea, £3000; Rochdale District Nurses' Homes, £5000; and Southport Convalescent Home, £5000. In addition to this large sum of £66,000, Henshaw's Blind Asylum is to receive £10,000; the Children's Sanatoriums at Southport, £1500; and a grant of £5000 is to be made to the Warehousemen and Clerks' Orphanage Home and Schools at Cheadle Hulme. Some other charitable bequests also were, it is understood, made in the will.

Small-pox.

The district is not yet free from small-pox. Two cases were notified to the Oldham sanitary authorities on June 5th. The medical officer at Accrington has reported, however, that that town is now free from the disease. Instead of allowing the small-pox hospital to remain idle he advised that it should be used for cases of advanced consumption, "as the patients would be better nursed and the chances of spreading the disease would be lessened." The health committee recommended the council to take legal proceedings against a medical gentleman, and the father of his patient, for having failed to notify a case of small-pox. This was agreed to.

High Death-rate at Accrington.

The medical officer reported that the death-rate for the year was one of the highest since 1897, while, with the exception of that for the previous year, the birth-rate was the lowest on record.

June 13th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Action against a Medical Man at the Assizes.

AT the recent Liverpool assizes, before Mr. Justice Walton and a special jury, George Hobson, formerly porter at the Royal Liverpool Golf Club, Hoylake, sued Dr. Arthur Bicknell for alleged negligence and breach of duty as a medical man, and for slander. The defendant pleaded that he was not negligent nor was he guilty of any breach of duty; that he never uttered the words alleged; that if he did they were true; and, in the alternative, that they were privileged. Evidence having been given, the judge, in summing up, pointed out that the plaintiff claimed damages under three heads: negligent treatment, breach of confidence, and slander. It was for him (the judge) to say, in regard to the last, whether or not the occasion was privileged, and if it was, and there being no evidence of malice, the jury need not trouble about the claim for slander, except that he would ask them whether or not the plaintiff was suffering as alleged. With reference to the alleged negligence, a mistake was not necessarily negligence. From the expert evidence it appeared that there were often cases in which a medical man could not be absolutely sure of his diagnosis and he might be acting prudently in treating a patient for what it might afterwards be found he had not got. Unless the jury thought that there was not only a mistake but a careless mistake which an ordinary skilful medical man would not make, and ought not to make, they ought not to find Dr. Bicknell guilty of negligence. On the question of breach of confidence his lordship said that apparently the plaintiff told the club steward what the medical man was treating him for and the steward communicated the information to the secretary. Where there was no secret there could be no confidence and he would leave it to the jury to say, having regard to the relations between the plaintiff, the medical man, and the club, whether the defendant had been guilty of a breach of confidence by failing to keep the secret. His lordship put the following questions to the jury, which, after an absence of four hours, they answered as follows: Was there negligence on the part of the defendant in the treatment of the plaintiff?—Yes, inasmuch as he accepted Dr. Moss's diagnosis without sufficient examination, but subsequently he used all reasonable care. Was the plaintiff on August 19th suffering from the disease stated?—No. Was there any breach of confidence by the defendant in telling Mr. Janion that the plaintiff, in his opinion, was suffering from the disease?—No. Did the defendant tell Mrs. Hobson at the interview before Sept. 28th, before the dismissal, that her husband was suffering from the disease?—No. His lordship: You find there was some negligence?—The foreman: Yes. His lordship: Would you tell me what damages the plaintiff has suffered from that? The jury assessed the damages at £71 16s., for which amount the judge subsequently entered judgment, with costs, for the plaintiff on the issue of negligence; while, with regard to the slander and breach of duty, he gave judgment for the defendant, with such costs as were attributable to those issues. Notice of appeal has been given and the case will be taken to a higher court.

Runcorn Hospital Extension.

At the monthly meeting of the Runcorn council the health committee reported in regard to the application for a loan of £4000 for hospital extension that the Local Government Board had asked the council to give an undertaking that cases of small-pox would not be treated on the site or within a quarter of a mile of it. The committee had replied, declining to do so on the ground that there would be no place in which to isolate cases of small-pox pending the erection of a small-pox hospital. The Local Government Board had sent a further letter stating that consideration of the council's application would be deferred until the undertaking was given. The committee recommended that a communication should be addressed to the Runcorn rural council to ascertain whether arrangements could be made for a joint small-pox hospital. Mr. Dean, in moving the adoption of the minutes, said the council was not anxious to spend this £4000, as it thought it had ample accommodation. The scheme of extension had been forced on the council and if the Local Government Board did not choose to give it power to borrow the money it would not trouble it. The minutes were approved.

Hospital Saturday Fund: Ladies' Street Collection.

The street collection made by the ladies on Saturday, June 3rd, shows a considerable falling off on last year's collection, only amounting to £530 17s. 5d. The decrease is accounted for by the rapid increase in the workshop and office collections, by the large number of street collections taking place at this period of the year, and by the continued depression in trade.

June 13th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Diet in Scarlet Fever.

AT a meeting of the Société Médicale des Hôpitaux held on June 2nd M. Dufour read a paper on the subject of Diet in Scarlet Fever, including the suckling of infants. He said that during the present year he had followed a new system in the dieting of scarlet fever patients by allowing them to follow their own inclinations during the first few days (from the third to the sixth day) of the disease without any restriction to particular kinds of food. According to current medical opinion this ought to increase the risk of renal complications, but it had not been followed by albuminuria in the case of any of his patients. Fever is not a contra-indication of feeding a patient. Albuminuria at the outset requires restriction to milk or to a chloride-free dietary and yet there is room for difference of opinion as to the necessity of this, for the resumption of ordinary food on the very day when the albuminuria disappeared was never followed by a return of the symptom. This method of dieting is not of merely theoretical interest but has a useful practical application when a woman has an infant at the breast and the supply of milk has to be kept up. Mothers and infants ought not to be separated in hospital treatment, for this would imply weaning with its attendant disadvantages. Suckling infants appear to be comparatively immune to scarlet fever. M. Dufour believed that solid food might be given without danger to scarlet fever patients from the

beginning of the illness if the state of the urine were systematically observed. The results obtained in this way were encouraging, for in 1904 he treated 288 cases of scarlet fever with only four deaths, the mortality being therefore about 1·5 per cent. It ought, moreover, to be remarked that these four deaths were due to extraneous complications, for two of the deceased were greatly addicted to alcohol, one suffered from lead poisoning, and one was a woman who had recently been delivered of a child under very unfavourable conditions. In conclusion M. Dufour said that he could not too strongly recommend bleeding in toxic dyspnœa without renal lesions.

Treatment of Obstinate Facial Neuralgia.

At a meeting of the Academy of Medicine held on May 30th Professor Raymond communicated a paper by Dr. Ostwalt relative to the treatment of severe forms of facial neuralgia for which various therapeutic measures had been employed without success. Dr. Ostwalt had made use of his method in about 30 cases, of which 14 had been seen by Professor Raymond or his assistants (*chefs de clinique*), four by M. Marie, and one by M. Dupré. It consists of deep injections of an alcoholic solution of cocaine or stovaine directed towards the principal branches of the trigeminal nerve at their points of issue on a level with the base of the skull. These injections were serviceable not only in facial neuralgia but also in neuralgia of the sciatic, the ulnar, and other nerves.

Miners' Anæmia.

At the same meeting of the Academy of Medicine M. Manouvrier described some new investigations which he had made on miners' anæmia. Like Blanchard, Boycott, and Haldane, he has found that certain mines have a remarkable immunity from this strange disease, which, as is well known, is caused by the presence of the parasite ankylostomum in the underground water. The unaffected mines are those in which there is an infiltration of salt water, such as those of Wieliczka in Galicia, those of St. Just in Cornwall which extends below the sea, and some of those in Anzin adjoining vast subterranean collections of salt water. It has been ascertained that the larvæ of the ankylostomum die in salt water of 1 per cent. strength and these infiltrations often contain as much as 1·8 or 2 per cent. of chloride of sodium. These results have led M. Manouvrier to recommend, if not the addition of salt to the water in mines, at least the use of salt water for sprinkling and for laying the dust which is sometimes a cause of explosions.

June 12th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

An Unusual Case of Hereditary Syphilis.

AT a recent meeting of the Vienna Clinical Society Dr. Hochsinger, director of a dispensary for diseases of children, showed a male patient, 20 years of age, who measured only 110 centimetres (three and a half feet) in height. His genital organs were imperfectly developed and his face had a drowsy expression on account of paresis of the eyelids. The interesting features of this case were the gradual onset and steady development of symptoms due to congenital syphilis. The father of the patient had contracted syphilis four years previously to his marriage. The patient was the fifth child and the first surviving one. When four weeks old he showed syphilitic symptoms on the skin of the face and legs and in the mucosa nasi. Treatment was continued for only six weeks. In his fifth year he had attacks of paroxysmal hæmoglobinuria and developed syphilis of the liver. Both ailments yielded to treatment by protoiodide of mercury. Five years later the right oculo-motor and facial nerves became paralysed but recovered under the use of iodine. After three years he was taken to a hospital on account of enuresis diurna, which later turned into difficulty of passing urine. At this time signs of arterio-sclerosis were well marked, mainly in the heart and the vessels of the arms. When 17 years old it was found that the pupils did not contract and were unlike in size and shape; the knee-jerk was also absent and Romberg's symptom was present. Infantilism was manifested by arrest of growth, absence of pubic hair, and a rudimentary condition of the testicles. The disease was evidently juvenile tabes due to congenital syphilis. Dr. Hochsinger laid stress on the fact that paroxysmal hæmoglobinuria in children under five years of age was always associated with syphilis.

Radiological Examination of Joints.

Dr. Robinsohn has worked out a method of displaying in a radiogram tissues otherwise not well discernible, such as synovial membranes, ligaments, and cartilage. The principle consists in interposing a specifically lighter medium between two media of approximately similar density which for that reason cannot be clearly differentiated by the x rays. For this purpose he uses oxygen gas injected under aseptic precautions. Injection of the gas into the hip-joint was effected under control of the eye during transillumination of the joint by the x rays. Radiograms obtained in this way show very clearly, for instance, in the knee-joint the outlines of the supra-patellar bursa, the condyles, the semilunar cartilages, the crucial ligaments, and the alar ligaments. Together with Dr. Werndorff he studied pathological joints in this way and they could distinguish cases of chronic arthritis with a serous effusion without changes in the bone, cases with disease of the synovial membrane and the cartilaginous and osseous structures, and chronic degeneration of the capsule leading to obliteration of the joint without any changes in the bone. These latter cases have hitherto not been visible with the x rays. The method will be used systematically in all the Vienna hospitals. It is necessary to have absolutely pure gas and to control the injection of it so that there may be no undue stretching of the tissues.

Vaccination under Red Light.

Dr. Paul, the director of the Vaccine Institute, has published the results of a series of experiments conducted with the view of ascertaining the value or otherwise of red light in vaccination. As vaccination is compulsory and gratuitous and as the above-mentioned State institute supplies all the material used the director was able to control the results. A room was specially fitted up for this purpose with red glass in the windows and the inoculation wounds were bandaged with red calico. It may here be mentioned that some vaccinators prefer the French method of vaccinating on the upper part of the thigh, thus avoiding scars on the arm, a point worth consideration amongst the better classes on account of the low dresses worn by ladies at balls, theatres, and the like. The results obtained under red light differed materially from those of ordinary vaccination. The pain and itching were sometimes less, the accompanying inflammation was certainly less marked, and lymphangitis was not very often seen. But the effect was most obvious in the formation of the scar which was very satisfactory from the cosmetic standpoint. In consequence of Dr. Paul's observations quite a number of practitioners in the country have followed his example and are sending in their observations to be used for statistics.

The Yearly Report of the Polyclinic.

The Vienna Polyclinic, the medical institution next in importance for teaching after the General Hospital, has just held its annual meeting, at which the director, Professor Monti, read the report for 1904. The number of in-patients amounted to 3208, comprising surgical, internal, pædiatric, and gynæcological cases. There were 689 major and 152 minor operations performed in the different wards. A new feature was the admission of 382 infants, a comparatively large number which was accounted for by the coöperation of the Polyclinic with the newly formed society for distributing milk to infants. The mortality from diphtheria was 3·89 per cent., being the lowest on record since the introduction of Behring's serum. The mortality from all diseases was 6 per cent., the proportion of recoveries was 82 per cent., and that of cases incurable or becoming worse was 12 per cent. The expenditure per patient per day was about three kronen, equal to 2*s.* 6*d.* The institute, which is under private ownership and management but coöperates with the University inasmuch as the professors lecture for State students, is now self-supporting, and its income has even a tendency to increase. Amongst the members of the staff there are some very celebrated teachers, such as Professor Monti, Professor Urbantschitsch, and Professor Spiegler.

Radium in Mineral Waters.

M. P. Curie and M. Laborde discovered comparatively large quantities of radium emanation in the mineral waters of Gastein and Dr. Kallmann has now examined these waters from the standpoint of the biologist. He studied the effects which the water, the sediment, and the gas issuing from the spring produced on the bacillus prodigiosus and he found that all these materials were capable of stopping the

development of the bacillus, especially the sediment, which actually had the strongest germicidal effects, killing the bacillus within a few hours. Mineral water bottled for longer than 48 hours had no effect whatever, not differing, in fact, from ordinary water. Dr. Kallmann therefore asserted at the meeting of the Graz Medical Society, where he read his paper, that the beneficial results of bathing in Gastein water are easily explained by the presence of a quickly evanescent radium constituent in the water.

June 12th.

NEW YORK.

(FROM OUR OWN CORRESPONDENTS.)

The Medical Department of the St. Louis Exposition.

THE late Universal Exposition, held at St. Louis, Missouri, had a well organised medical department, the medical director of which has submitted his report. The duties of the department were to have jurisdiction over all cases of personal injury; to assume the care of the resident population and visitors and of such other cases as the Exposition Company might be responsible for, or which in their judgment should be cared for; and to exercise a supervision over all sanitary and hygienic matters connected with the grounds and buildings and over all matters pertaining to the health and physical well-being of the employés engaged in the conduct of the exposition. The officers of the department consisted of a medical director, five attending surgeons, one visiting physician, one bacteriologist, one sanitary officer, three ambulance surgeons, one sanitary expert, and one sanitary inspector. A permanent emergency hospital was erected, complete in all its appointments, for the accommodation of officers, nurses, and attendants and equipped with the most improved appliances. The total number of cases treated during the entire period was 29,045. There were 7 births and 40 deaths, of which 23 were from violence and 17 from natural causes. A number of workmen escaped fatal results in falling 50 feet or more and one was uninjured by a fall of 120 feet. There was but one fatal case of gunshot injury. During the exposition beri-beri appeared and there were 45 cases and 3 deaths. The disease occurred among the tribe of Igorotes from the Philippine Islands.

The Department of Sanitation at the Isthmus of Panama.

The recent outbreak of yellow fever at Panama indicates that the rumours of defects in the measures taken to prevent that disease were too true. No one doubts the ability of Colonel Gorgas, the head of the sanitary service, to employ preventive measures to the best possible advantage, but there have been rumours that the commission has refused to allow many important requests which he has made, and that on this account the fever has gained a foothold which it could not have done had he had a free hand from the first. The new commission recently met at Washington and perfected the organisation of the department of sanitation on a scale commensurate with its importance. The salary of the chief sanitary officer has been fixed at $10,000, of the director of hospitals at $8000, of the chief quarantine officer at $7000, and the other officers have salaries according to their grade. In addition to the hospital at Ancon and at Colon the commission ordered the erection of another hospital at Colon at a cost of $40,000. The latest reports show that of the 7000 employés on the canal 350 are in hospital, or about 5 per cent.

Abolition of State Boards of Health.

There is a growing tendency in this country to abolish the State boards of health and substitute for them a health officer, or, as he is more often called, a commissioner of health. In the State of New York the substitution was made two years ago, a large and well organised board being summarily abolished and in its place a single general practitioner placed by appointment of the Governor. Now the State of Pennsylvania has followed the example and abolished its board of health and appointed a commissioner of health in its place. This change is in the interests of partisan politics and is destructive of the first principles of efficient sanitary administration. The true functions of the department of sanitation in a Government are the creation and enforcement of sanitary ordinances which have the force and sanctity of law. It should, therefore, have as its head a body having both legislative and administrative powers, an organisation that cannot exist when there is but a single official at its head. In the State of New York this change in the character of the head of the department has been followed by a distinct loss of prestige of that service and a marked deterioration in its power and efficiency. The United States has been developing a most complete and efficient system of sanitary administration, extending from the hamlet and municipality through the State Governments to the National Government. This recent change of the State boards is destined to work great harm by impairing the proper coördination of functions of the several parts of the system and on that account is greatly regretted by sanitary legislators. In this State the Governor has recently appointed a homœopathic physician to the position of commissioner of health, the effect of which will be to alienate the interest of the regular profession entirely from the department.

A Protest against Quarantining Cuba.

No single event in the history of municipal sanitation more strikingly illustrates the value of modern methods than the improvement in the public health of the cities of Cuba. Previously to the occupation of the island by the United States quarantines were early established, at all the Atlantic and Gulf sea ports, against Cuba and were rigidly maintained until very late in the season. Now such action on the part of the cities of the United States is promptly resented by the Cuban health authorities. The State health boards of the Gulf States recently issued a quarantine order against passengers from cities of Cuba other than Havana. As soon as this action became known in Cuba the Cuban national board of health sent a cable message to the Louisiana State board of health to the effect that the superior board of health protests against their action discriminating against territory of the Republic outside of Havana, and alleging that they are in constant touch with all districts, and they know that these districts are just as free from all quarantinable diseases as is Havana. Dr. Finlay, chief sanitary officer of Cuba, says that there is no justification for this discrimination against the island outside of Havana, for the entire country is under constant and effective control. When a case or a suspected case of a quarantinable disease occurs anywhere in Cuba the local officer is compelled to telegraph the fact at once to the chief sanitary officer at Havana. The latter then orders the provincial inspector of the corresponding province to investigate the case. The inspector telegraphs the result of his investigation; if the diagnosis is confirmed or the suspicions are maintained one or more experts are sent and every measure is taken to prevent the spread of the disease.

Prevention of Tuberculosis.

The first annual meeting of the United States National Association for the Study and Prevention of Tuberculosis commenced in Washington on May 18th; Dr. William Osler, vice-president of the association, delivered an eloquent address. He emphasised the need of educating the public with regard to tuberculosis. He said: "Education regarding tuberculosis is the thing to strive for. The public is awake but sitting on the edge of the bed and not yet dressed. In this awakening, however, much has been accomplished over past conditions. When the public gets dressed much activity will follow and much will be accomplished towards stamping out the disease." Dr. Osler also said that no greater mistake was possible in the treatment of tuberculosis than to keep from the patient in the early stages of the disease the full knowledge of its existence. Dr. Herman M. Biggs, chief medical officer of the New York board of health, laid especial stress upon the good results of compulsory notification. He showed what had been accomplished by these means in New York city which was still the only great city where it was practised. The discussion on May 19th brought out the fact that all efforts so far to establish self-supporting communities or settlements of tuberculous patients had proved a failure. The opinion was general that all cases of tuberculosis should be allowed to remain at large where proper care of the patient was maintained and proper sanitary requirements observed to protect members of the family in the house of which the patient resided. In November the first American tuberculosis exhibition will be held in New York city. It will be organised under the auspices of the United States National Association for the Study and Prevention of Tuberculosis and the committee for the prevention of tuberculosis of the New York Charity Organisation Society. Dr. Ernst J. Lederle, former commissioner of health of New York city, is chairman of the committee in charge.

June 3rd.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

The Plague.

BUBONIC plague is spreading in New South Wales and Queensland. Cases have occurred in Sydney, Newcastle, Brisbane, and Ipswich, and the area from which they come and in which plague-infected rats have been found is extending. Several of the cases have proved fatal. Plague-infected rats are still found in the Richmond River district. Plague first appeared in Newcastle on March 27th and since then six cases have occurred, two fatal. One of the victims was a medical man, Dr. J. R. Leslie, who had been attending a plague patient and assisted at a post-mortem examination of his body. Dr. Leslie is a young graduate of the University of Sydney who succeeded to the practice of Dr. Andrew Nash who died in March last from blood poisoning. Dr. Leslie is improving. The Newcastle municipal council held a special meeting to deal with matters affecting public health. The model by-laws, drafted by the Board of Health as a means of helping to deal with bubonic plague, were adopted. House-to-house inspections were being made. At Ipswich in Queensland five cases of plague were reported in one day and sent to the Colmslie plague hospital.

Dengue Fever.

Dengue fever is still very prevalent in Brisbane. The sittings of the district court had to be postponed owing to the illness of the judges. The drain on the funds of the friendly societies for sick pay is becoming severely felt. A case of dengue has occurred at Wagga in New South Wales. A peculiar feature of some of the cases in Brisbane has been a tendency to somnolence for two or three days. In other cases the want of sleep has brought on mental conditions necessitating removal of patients to the reception house

Hospital Affairs.

There are two distinct institutions in Sydney for the treatment of women—viz., the Women's Hospital and the Royal Hospital for Women. The latter is conducted by the Benevolent Society of New South Wales. For about 87 years this body endeavoured to treat women in labour and gynæcological cases in an ancient building erected by Governor Macquarie. Here it also gave outdoor relief and cared for infants. This site and building were resumed by the Government for the new central railway station. With the funds, £62,000, given as compensation, the society has established two separate institutions—viz., a receiving house at Ultimo, with accommodation for infants and to provide for the administration of outdoor relief, which is now in full working order, and a separate hospital at Paddington, which was formally opened by Her Excellency Lady Northcote on May 3rd. The building erected is only a wing of the future hospital. It is thoroughly up to date and will provide 100 beds and the operating block.—The annual meeting of the subscribers to the Queen Victoria Homes for Consumptives was held on April 13th. The fund started with £1100 more to its credit than last year and the upkeep of the two homes was £3297 as against £3699 the previous year. Accommodation for 85 cases was now available.—It was formally announced some time ago that the Government institution at Broadmeadows, Victoria, for the treatment of consumptives would be opened on May 1st but it is not yet ready. Dr. Drake has been appointed medical superintendent. The buildings erected are eight tents for patients, quarters for the medical superintendent and matron, dining-hall, kitchen, and rooms for domestics. The tents each contain six beds. The cost so far is £2000. The water-supply has still to be arranged. For incurable cases nothing has been done, and the Kronheimer wing at the Austin Hospital is not yet opened. It was thought that some agreement had been arranged but the Premier subsequently altered the conditions in which he would permit the new wing to be opened and nothing was done.—The Melbourne Hospital will shortly have been erected 50 years. In view of this fact the committee has decided to ask the Govenor-General to request His Majesty the King for permission to call the institution the Royal Melbourne Hospital.

Amputation under Spinal Anæsthesia with Eucaine.

In the *Intercolonial Medical Journal* for April Mr. J. Ramsay records a case of amputation for gangrene under anæsthesia produced by injection into the spinal canal of 50 minims of 1 per cent. solution of β eucaine in normal saline solution. In five minutes total analgesia of the lower extremities was produced and the limb was painlessly amputated at the knee-joint. Sensation returned in two and a half hours. The evening temperature reached 101·2° F. and the patient had hiccough and flatulence. He had no headache or vomiting. On the next morning his temperature was normal. Recovery was uninterrupted. The patient was considered unsuitable for a general anæsthetic, having a dilated heart, loud bruit, atheromatous vessels, and a large amount of sugar in the urine.

Case of Abdominal Pregnancy.

In the same journal Dr. F. Meyer records a case of what he regards as primary abdominal pregnancy. Both tubes were normal and intact, and the placenta was attached to the posterior surface of the uterus.

Obituary.

Dr. Thomas Cole Wright, who had been practising at Gulgong, New South Wales, for some years, died suddenly from cerebral hæmorrhage. He had apparently been in perfect health previously.

May 8th.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen having passed the necessary examinations and having conformed to the by-laws and regulations, have been admitted Members of the College and have received their diplomas:—

Sydney Chalmers Allen, M.B., B.Sc. New Zealand, New Zealand University and King's College Hospital; Francis Barlow Ambler and Berkeley Noel Ash, St. Bartholomew's Hospital; Ivor Gordon Back, B.A. Cantab., Cambridge University and St. George's Hospital; Albert Ogier Bisson, Lausanne University and London Hospital; Edward Brabazon, Trinity College, Dublin, and Middlesex Hospital; Richard Charles Bright, University College, Bristol, and St. Mary's Hospital; Charles Bazett Dean Butcher, St. Bartholomew's Hospital; Hector Charles Cameron, M.A. Glasg., B.A. Cantab., Cambridge University and Guy's Hospital; Thomas Andrew Chater and Reginald John Hands Cox, St. Thomas's Hospital; George Hammond Cheyney, Guy's Hospital; Charles St. Arnaud Coles, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Stephen Estridge Crawford, Claude Harold Cross, and Percival Alfred Dingle, St. Bartholomew's Hospital; Victor Adolphus Crinks, University College, Bristol; Ashley Skeffington Daly, London Hospital; David Morgan Davies, Charing Cross Hospital; William Leonard Dickson, Middlesex Hospital; Cecil James Stewart Dismorr, Guy's Hospital; James Sholto Cameron Douglas, B.A. Oxon., Oxford University and St. George's Hospital; Arthur Melville Dowdall, University College and Royal Infirmary, Liverpool; Stanislaus Marcus Dowling, Trinity College, Dublin, University College, Bristol, and St. Bartholomew's Hospital; Thomas William Newton Dunn, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Watts Edmondson, Yorkshire College and General Infirmary, Leeds; John Newbery Fraser Fergusson, Cambridge University and St. Thomas's Hospital; George Finch, Yorkshire College and General Infirmary, Leeds, and St. Thomas's Hospital; Ernest Victor Frederick, M.B. Toronto, Trinity College, Toronto; Kenneth Farquharson Gordon, New Zealand University and Middlesex Hospital, Harold Ernest Graham, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Samuel Lewis Graham, University College Hospital; George Francis Hardy, Guy's Hospital; Walter Dixon Hartley, Middlesex Hospital; Charles Francis Alexander Hereford, Charing Cross Hospital; Wilson Harold Hey, Owens College and Royal Infirmary, Manchester; Gilbert Holroyd, Cambridge University and St. Bartholomew's Hospital; Eric Crichton Hood, Yorkshire College and General Infirmary, Leeds; Alfred Wyatt Hooker, St. Thomas's Hospital; Charles William Menelaus Hope, Durham University; Alfred Stroud Hosford, University College Hospital; James Bonnell Howell, University College, Cardiff, and University College Hospital; Thomas Martin Hughes, Owens College and Royal Infirmary, Manchester; Cecil William Hutt, Cambridge University and St. Bartholomew's Hospital; Richard Rossiter Huxtable, Charing Cross Hospital; Charles Edward Ilos, Mason College and General Infirmary, Birmingham; Algernon Meyrick Alban James, St. Bartholomew's Hospital; Frank Anderson Juler, B.A. Cantab., Cambridge University and St. Mary's Hospital; Edgar Narman Jupp, Guy's Hospital; Frederick William Kemp, Durham University and St. Bartholomew's Hospital; Bernard Warner Lacey, Durham University and Guy's Hospital; Llewelyn Llewelyn, University College, Cardiff, and London Hospital; Francis John Loveday, London Hospital; Donald Grey MacGill, Owens College and Royal Infirmary, Manchester; Frank Smith Machin, L.D.S. Eng., Mason College and General Infirmary, Birmingham; Thomas William Maddison, Durham University and London Hospital; Harold Philip Martin, M.D., C.M. Toronto, Trinity College, Toronto, and Middlesex Hospital; John Clarke Meade, Henry Mills, and Basil Eustace Moss, St. Bartholomew's Hospital; William Miles, St. Mary's and Middlesex Hospitals; Percy Frank Minett and Arthur Boniface

O'Brien, Guy's Hospital; Reginald Cavan Nell, University College Hospital; Douglas Cattersall Leyland Orton, Owens College and Royal Infirmary, Manchester; Vladimir Nikolaevitch Ouranoffski, University Colleges, Glasgow and Liverpool; Percy Richard Parkinson, Cambridge University and St. Bartholomew's Hospital; Percival Leslie Pearce, Glasgow University and King's College Hospital; Alan Hargrave Pinder, Owens College and Royal Infirmary, Manchester, and St. Bartholomew's Hospital; Robert Elliot Pitts, Middlesex Hospital; Gordon Christopher Pounds and Arthur George Lawrence Reade, Charing Cross Hospital; George Raymond, Westminster and St. Thomas's Hospital; James Dorham Reid, Middlesex Hospital, Owens College, and Royal Infirmary, Manchester; Percy George Reilly, Robert Leslie Ridge, and George Fitzgerald Rudkin, London Hospital; Frank Melville Pitcairn Rice, Horace Hammond Rolfe, and Harold Edward Seconee, St. Bartholomew's Hospital; David Harold Richards, Guy's Hospital; John Chambers Lawton Roberts, Cambridge University and St. Thomas's Hospital; James Edmund Rutherford, Oxford University and St. George's Hospital; Emil Schwarz, Vienna University and Charing Cross Hospital; William Lochhead Scott, University College Hospital; Harold Munro Scott, London Hospital; Timothy William Sexton and Armstrong Smith, Middlesex Hospital; Cyril Aubrey Smallhorn, Oxford University and St. Bartholomew's Hospital; Thomas Stordy Charing Cross Hospital; Samuel Henry Sweet, University College, Cardiff, and London Hospital; Arthur Barry Sykes, University College, Liverpool, and University College, Hospital; Edwin Charles Tatam, L.S.A. Lond., King's College Hospital; George Thom, King's College Hospital; James Douglas Thomas, Guy's Hospital; Louis Clifford Thompson, University College, Bristol, and University College Hospital; Arthur Toulmin, Owens College and Royal Infirmary, Manchester; William Samson Tresawna, Cambridge University and St. George's Hospital; John Ronald Rigden Trist, Frank Edred Whitehead, and Augustus Scott Williams, St. Bartholomew's Hospital; Rawdon Augustus Veale, Yorkshire College and General Infirmary, Leeds; William Charles Augustus Ward and David Wilson, St. Thomas's Hospital; Walter John Weston, St. George's Hospital; Alfred Gurth Whitaker, Charing Cross Hospital; William Percival Gould Williams, Cambridge University and St. Thomas's Hospital; and Ernest Douglass Weiff, King's College Hospital.

The following gentlemen passed the first professional examination for the diploma of Fellow at the quarterly meeting of the examiners:—

James Johnston Abraham, M.B. Dub., Dublin, King's College, St. Bartholomew's and London Hospital; David Macrae Aitken, M.B. & F.R.C.S. Edin., Edinburgh University; David Thomas Barry, M.D., R.U.I., D.P.H., Queen's College, Cork, and Liverpool University; Thomas Herbert Cecil Benians, London Hospital; Wilfred Edward Brierley, M.B. Vict., Yorkshire College, Leeds, and King's College, London; Colin Clarke, St. Bartholomew's Hospital; Alfred John Cousens, London Hospital; Kenelm Hutchinson Digby, Guy's Hospital; Reginald Lionel Ernest Downer, St. Bartholomew's Hospital; George Greig Farquhar, M.B., Ch.B., Aberdeen University and London Hospital; William Stephen Fenwick, Charing Cross Hospital; Charles William Greene, B.A. Cantab., Guy's Hospital; Edgar Hartley Kettle, St. Mary's Hospital; Kenneth Arthur Lees, B.A. Cantab., Cambridge University, King's College, London, and St. Mary's Hospital; Aaron Levy, B.A., M.D., C.M., St. Bartholomew's Hospital; Bertram Arthur Lloyd, University of Birmingham; Reginald Broughton Lloyd, B.A. Cantab., Cambridge University and London Hospital; Alfred Edward Arthur Loosely, M.A., M.B., B.Ch. Oxon., Oxford University, St. Thomas's Hospital; William John Ogilvie Malloch, B.A., M.B., University of Toronto; Henry Lewis Morgan, London Hospital; William Maxwell Munby, M.B., Ch.B. Edin., Edinburgh University and London Hospital; Humphrey Nockolds, University and King's College, London; Charles Aubrey Pannett, B.Sc., St. Mary's Hospital; Robert Nuttall Porter, M.D., Ch.B., Owens College, Manchester; Harold Vernon Prynne, Middlesex Hospital; Harry Richardson Rawlings, University of Leeds; Rupert Lewis Rawlinson, B.A. Cantab., Cambridge University and King's College, London; James Ernest Helme Roberts, St. Bartholomew's Hospital; David Robertson, Edinburgh University; Alfred Basil Rooke, University College, London; Donald Whatley Roy, B.A. Cantab., St. George's Hospital; Herbert Frank Shorney, M.D., B.S. Melb., Melbourne University and Middlesex Hospital; Walter Stansfield, Owens College, Manchester; Leonard Smith Talbot, M.B., Ch.B. New Zealand, King's College, London, and Otago Medical School, New Zealand; Henry Darby Thomas, London Hospital; Reginald Stephen Townsend, St. Bartholomew's Hospital; Harold Fitz-Vellacott, London Hospital; John Walker, St. Thomas's Hospital; Harry Gordon Webb, St. George's Hospital; and Carl Ernest Zunde, London Hospital.

122 candidates presented themselves, of whom 40 passed and 82 were referred. Of the 82 candidates who were referred, 42 failed to reach the required standard in both Anatomy and Physiology, 23 in Anatomy only, and 17 in Physiology only.

The following gentlemen having passed the necessary examination and having conformed to the by-laws and regulations have been admitted Fellows of the College in order of seniority as Members of the College:—

Frank Arthur Spreat, L.S.A. and D.P.H. Lond., St. Bartholomew's Hospital, Member July 30th, 1894; Frederick Norman, M.D. Brux., D.P.H., L.R.C.P. Lond., St. Bartholomew's Hospital, Member April 28th, 1898; William Selby, D.S.O., Capt. I.M.S., L.R.C.P. Lond., St. Bartholomew's Hospital Member August 1st, 1892; Thomas Howard Foulkes, Capt. I.M.S., L.R.C.P. Lond., St. Bartholomew's Hospital, Member Nov. 10th, 1892; James Midleton Graham Swainson, L.R.C.P. Lond., Westminster Hospital, Member August 4th, 1896; Thomas Perrin, M.B., L.R.C.P. Lond., St. Thomas's and London Hospital, Member Feb. 9th, 1899; Edgar Taunton, M.B., D.P.H., L.R.C.P. Lond., University College and London Hospitals, Member July 27th, 1899; Charles Bertram Thomson, L.R.C.P. Lond., Guy's and London Hospital, Member July 27th, 1899; Robert Alexander Walker, M.B., B.C. Cantab., L.R.C.P. Lond., St. George's and St. Bartholomew's Hospital, Member Feb. 8th, 1900; Charles Killick, M.B., B.C. Cantab., L.R.C.P. Lond., St. Mary's Hospital, Member July 25th, 1900; Cecil Irving Graham, L.R.C.P. Lond., St. Mary's Hospital, Member Nov. 14th, 1901; Charles Ernest Lakin, M.D. Lond., L.R.C.P. Lond., Middlesex Hospital, Member Nov. 14th, 1901; Robert Valentine Dolbey, M.B. Lond., London Hospital, Member Feb. 13th, 1902; George Frederick Darwall Smith, M.A., M.B., B.Ch. Oxon., L.R.C.P. Lond., St. George's Hospital and Oxford University, Member Feb. 13th, 1902; Owen William Richards, M.D., B.Ch. Oxon., L.R.C.P. Lond., Oxford University and Guy's Hospital, Member May 8th, 1902; Harry Pierpoint, L.R.C.P. Lond., University College, Liverpool, Member July 31st, 1902; Bernard Joseph Ward, L.R.C.P. Lond., Birmingham University and London Hospital, Member July 31st, 1902; Moses Thomas Williams, M.B., L.R.C.P. Lond., London Hospital, Member July 31st, 1902; William Warwick James, L.R.C.P. Lond., L.D.S. Eng., Middlesex Hospital, Member Nov. 13th, 1902; Oliver Francis Haynes Athey, M.B. Lond., King's College Hospital, Member Feb. 12th, 1903; Walter Leigh Mackinnon Goldie, L.R.C.P. Lond., Edinburgh University and St. Mary's Hospital, Member Feb. 12th, 1903; Thomas Guthrie, M.A., M.B., B.C. Cantab., L.R.C.P. Lond., Cambridge University and St. Thomas's Hospital, Member Feb. 12th, 1903; Arthur Francis Hamilton, M.D. Lond., L.R.C.P. Lond., St. Bartholomew's Hospital, Member Feb. 12th, 1903; Henry Bailey Mylvaganam, L.R.C.P. Lond., St. Bartholomew's Hospital and Ceylon Medical College, Member Feb. 12th, 1903; Francis Seymour Kidd, M.B. Cantab., L.R.C.P. Lond., Cambridge University and London Hospital, Member May 14th, 1903; Leonard Noon, B.C. Cantab., L.R.C.P. Lond., Cambridge University and St. Bartholomew's Hospital, Member August 4th, 1903; James Douglas Cooke, M.B., B.S. Melb., L.R.C.P. Lond., Melbourne University and London Hospital, Member Nov. 12th, 1903; Arthur Cyril Hudson, M.A., M.B., B.C. Cantab., L.R.C.P. Lond., Cambridge University and St. Thomas's Hospital, Member May 12th, 1904; Frederic William Daniels, L.R.C.P. Lond., London Hospital, Member July 28th, 1904; Tom Bates, L.R.C.P. Lond., St. Bartholomew's Hospital, Member Nov. 10th, 1904; Thomas Bonhôte Henderson, M.A., M.B. Oxon., L.R.C.P. Lond., Oxford University and St. Thomas's Hospital, Member Nov. 10th, 1904; Sydney Chalmers Allen, M.D., B.Sc. New Zealand, L.R.C.P. Lond., New Zealand University and London Hospital, Member May 11th, 1905; John Dundon, M.B., B.Ch., R.U.I., Queen's College, Cork, not a member; Frederick William Ellis, M.B., Ch.B. Aberd., Aberdeen University, Yorkshire College, Leeds, and King's College Hospital, not a member; Edgar Montague Pilcher, D.S.O., Major R.A.M.C., M.B., B.Ch. Cantab., Guy's Hospital, not a member.

UNIVERSITY OF CAMBRIDGE.—Dr. G. C. Low, superintendent of the London School of Tropical Medicine, has been appointed an examiner for the Diploma in Tropical Medicine and Hygiene in the place of Sir Patrick Manson who is unable to examine in August.—Dr. D. MacAlister has been re-appointed assessor to the Regius professor of physic.—At the Congregation on June 8th the following degrees were conferred:—

M.D.—F. A. S. Hutchinson, Trinity; J. W. Rob, St. John's A. de W. Snowden, Christ's; and J. E. Molson and H. S. Willson, Emmanuel.
D.Sc.—Professor W. R. Sorley.
M.B.—H. H. Clarke and S. M. Mackenzie, Trinity; R. N. Poignand, Caius; J. A. A. Orlebar, Magdalene; and H. Wales, Sidney Sussex.
B.C.—S. M. Mackenzie, Trinity; R. N. Poignand, Caius; and J. A. A. Orlebar, Magdalene.

UNIVERSITY OF OXFORD.—The following scholarships are announced in natural science: June 20th, St. John's College; July 4th, Brasenose College; and Dec. 12th, University, Lincoln, and Magdalen Colleges.—Walter W. W. Fisher, M.A., Corpus Christi College, Aldrichian Demonstrator in Chemistry, has been appointed an examiner in preventive medicine for the examinations in 1905, 1906, and 1907.

THE ANNUAL DINNER OF THE CHELSEA CLINICAL SOCIETY.—Dr. T. Vincent Dickinson, the President, took the chair on June 8th at this dinner, which was held at the Criterion Restaurant, London. A large number of the members of the society and their friends attended and the proceedings were marked by much enthusiasm. The first speaker after the loyal toasts had been honoured was the President who proposed "The Chelsea Clinical Society." He commented with great satisfaction on the speech lately delivered by Sir Richard Douglas Powell in which that gentleman declared that the scheme for the amalgamation of the various medical societies in London was not intended to include local societies like the Chelsea Clinical Society. Sir Douglas Powell stated definitely that it would be a distinct loss if such local societies ceased to exist. Dr. J. Barry Ball was intrusted with the reply to this toast and after some music had been well rendered Mr. E. Noble Smith proposed "The Visitors and Kindred Societies." This was suitably replied to by Mr. W. Arbuthnot Lane and the Rev. Dr. Collison. More music and songs followed and an enjoyable evening was terminated by Dr Seymour Taylor submitting the toast

of "The President and Officers of the Society," which was acknowledged by the President.

ST. PETERSBURG CHILDREN'S HOSPITAL.—The opening of the St. Petersburg Town Children's Hospital, built in honour of the coronation of their Imperial Majesties the Russian Emperor and Empress, has taken place recently. The hospital consists of 18 separate buildings and contains 400 beds. The staff in permanent residence on the premises numbers 250. The cost of the institution amounts to about £170,000.

POOR-LAW MEDICAL OFFICERS' ASSOCIATION OF ENGLAND AND WALES.—The annual general meeting of this association will take place on Tuesday, June 27th, at the Trocadéro, London, W., at 6.30 P.M. At 7.30 the members and their guests will dine together, Surgeon-General G. J. H. Evatt, C.B., the President-elect, being in the chair. Any Poor-law medical officer desiring to be present should communicate with Dr. Major Greenwood, honorary secretary, 9, Copthall-avenue, London Wall, E.C.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.—At the annual meeting on June 1st Dr. A. Newsholme was elected President for the ensuing year; Mr. G. Morgan and Dr. F. J. Paley Vice-Presidents; Mr. C. J. Oldham treasurer; Dr. R. Sanderson honorary librarian; and Dr. E. Hobhouse and Dr. Walter Broadbent honorary secretaries. Mr. W. A. Bowring, Mr. A. H. Buck, Dr. W. C. Chaffey, Dr. F. Hinds, Dr. L. A. Parry, Dr. J. W. Pugh, Dr. R. J. Ryle, and Mr. T. J. Verrall were elected members of the council.

CHÂTEL-GUYON AND MEDICAL MOTORISTS.—On account of the advantageous position of Châtel-Guyon as a starting point for excursions in Auvergne, as well as its proximity to the "*circuit*," the local Syndicat Médical offers various facilities to medical men who wish to be present either at the trial matches (*éliminatoires*) or at the "*coupe*." These facilities include a claim to a certain number of rooms in the best hotels, reserved garages, and seats in the tribune of the Société Sportive Riom-Châtel-Guyon. Application should be previously made to the Président du Syndicat Médical de Châtel-Guyon-les-Bains, Puy-de-Dôme, France.

DURHAM UNIVERSITY MEDICAL GRADUATES' ASSOCIATION.—The annual meeting of this association was held at the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, on June 9th, under the presidency of Dr. J. W. Hembrough of Newcastle-on-Tyne. There was a good attendance. The annual report and balance-sheet of the treasurer showed that the numerical strength of the association is steadily increasing and that its financial condition is highly satisfactory. The question of taking steps to obtain Parliamentary representation for the University was again brought forward and the result of the recent appeal made to the Senate on this subject was discussed. In view of the advanced stage of the session it was decided to postpone further action in the matter for the present. General regret was expressed at the retirement of Dr. T. Outterson Wood from the post of honorary secretary for the South and a resolution acknowledging the excellent work which he had done for some years in that capacity was unanimously passed. The following were elected as the officers and council for the year 1905-06. President: Dr. Herbert T. Herring. Vice-Presidents: Dr. Selby W. Plummer and Dr. C. W. Chapman. Council: Mr. H. B. Angus, Dr. John Clay, Dr. H. Smith, Dr. William Martin, Dr. T. Beattie, Dr. E. W. Diver, Dr. John Cahill, Dr. F. H. Carter, Dr. F. E. Green, Dr. William Rawes, Dr. W. J. Hadley, and Dr. R. J. Probyn-Williams. Honorary secretaries: Dr. J. W. Leech for the North and Dr. F. S. Palmer for the South. Honorary treasurer: Dr. R. A. Bolam. Auditors: Mr. C. S. Blair, Dr. T. M. Allison, and Dr. H. Smurthwaite. Watch committee: Dr. W. C. Beatley, Dr. M. Mitchell Bird, Dr. H. T. Herring, and Dr. S. W. Plummer. The members and guests (numbering 84) dined together in the evening at the Imperial Restaurant, Regent-street. Dr. Herring, the newly elected president, occupied the chair. After the usual loyal toasts had been given that of the University of Durham and its Medical Graduates' Association was proposed by Mr. Christopher Heath and responded to by Sir George Hare Philipson and Dr. Palmer. The toast of the visitors was proposed by Dr. Plummer and replied to by Sir Lauder Brunton. Dr. G. A. Heron proposed the health of the President and Dr. Herring replied. Excellent music was provided under the direction of Mr. Arthur Godfrey and a most enjoyable evening was spent.

BRITISH BALNEOLOGICAL AND CLIMATOLOGICAL SOCIETY.—The general meeting of this society was held at 20, Hanover-square, London, W., on May 31st, Dr. F. Bagshawe (St. Leonards) being in the chair.—The officers and council for the ensuing session were elected, Dr. G. W. Hamilton Cumming (Torquay) being chosen as president. Dr. William Murray (Newcastle-upon-Tyne) was unable to be present owing to an accident, but his address, entitled "The Limitations of Treatment," was read by Dr. Leonard Williams and was much appreciated by the Fellows. The address will be published in the *Journal of Balneology and Climatology*. Dr. E. Symes-Thompson proposed, and Dr. Bagshawe seconded, a vote of thanks to Dr. Murray, which was carried unanimously. On the same evening the annual dinner of the society was held at the Criterion Restaurant.

THE FERNLEY OBSERVATORY.—In his report on the work of the Fernley Meteorological Observatory at Southport for the year 1904 Mr. Joseph Baxendell, meteorologist to the Southport corporation, states that the weather at that place during the year was very dry but, on the whole, sunless, with much fog and haze. There was no strikingly hot or cold month. The total duration of bright sunshine was 1473·5 hours, being 92·6 hours below the average, and the total rainfall was 26·01 inches, or 7·41 inches below the average; in London for the same period the total duration of bright sunshine was 1327·6 hours. The mean amount of atmospheric ozone at the Fernley Observatory was less than in any previous year since it was established in 1871. The lowest temperature registered on the grass by a sensitive terrestrial radiation minimum thermometer was 13·4° F. on Feb. 29th. The greatest general thickness of the ice over the large lake in Hesketh Park was 1·7 inches on Nov. 27th. During the autumn and winter season the observatory was opened to the general public on three evenings weekly and celestial objects were viewed through the six-inch refracting telescope by 168 visitors.

WEST LONDON HOSPITAL AND POST-GRADUATE COLLEGE: ANNUAL DINNER.—Under the genial chairmanship of Dr. Seymour Taylor the past and present students of the Post-Graduate College of the West London Hospital held their annual dinner at the Trocadéro Restaurant, London, on June 7th. The guests present included Sir R. Douglas Powell, Director-General H. M. Ellis, Royal Navy Medical Service, Director-General A. H. Keogh, Army Medical Service, and Mr. G. F. Marshall, member of the board of management of the West London Hospital. The loyal toasts having been duly honoured Mr. C. B. Keetley in an amusing speech proposed the toast of "The Imperial Forces" which was responded to by Director-General Ellis, who said that the Royal Navy Medical Service owed a deep debt of gratitude to the West London Hospital. A very considerable number of naval medical men had undergone their post-graduate course in that hospital. Director-General Keogh, who also replied to the toast, explained how arrangements had been made for the officers of the Army Medical Service to receive instruction in London. He, however, particularly addressed himself to the question of the position of the volunteer medical officer. In case of war the Director-General of the Army Medical Service would be the only officer of that service left in this country, the volunteer medical officers supplying the places of those who would have gone abroad. It was not sufficient for a medical officer to be able to take care of a regiment. What had to be done was to provide an organisation to take the place of the Army Medical Service in the case of need and he invited the attention of those who were interested in the post-graduate movement to the necessity of something being done in that direction. The Chairman proposed the toast of "The West London Hospital and Post-Graduate College" and congratulated those present on the success of the institution. The Dean, Mr. L. A. Bidwell, in acknowledging the toast, gave some interesting statistics dealing with the progress of the college. He concluded by pointing out how necessary it was that the college buildings should be made adequate for the purposes which they were intended to serve. The toast of "The Visitors" was proposed by Mr. F. Swinford Edwards and was responded

to by Sir R. Douglas Powell who observed how the wants of post-graduates were admirably met by the West London Hospital. After the toast of "The Chairman" had been duly submitted and suitably replied to the proceedings came to an end.

INSANITARY CONDITIONS IN BOLIVIA.—Writing from Oruro, the chief mining district of the Bolivian Republic in South America, Mr. J. Ramsay Smith, British Vice-Consul, observes that miners are scarce and wages have doubled in the last few years. The pure-bred Indian does not work in the mines as a rule but lives on his small patch of land or brings native fuel, &c., on his llamas and donkeys for the mining establishments. The half-breed is the labourer of the country. During the present boom all kinds of labour-saving machinery and appliances have been introduced to render the work as automatic as possible but much remains to be done in this line. The climate of the district is good—a dry, bracing mountain climate—but mortality is very high (about 100 per 1000). Intemperance is general amongst the working classes. They are not particular about the quality of the drink provided it be alcoholic. Their food depends on themselves. Fresh beef, mutton, good bread, and potatoes are usually abundant and cheap. Their houses are mere hovels without windows or ventilation. Modern ideas of sanitation are nowhere practised. Drainage of the towns does not exist. In the yard of most houses there is a deep pit into which all the excrement is thrown without the addition of any disinfectant. It is not to be wondered at that typhoid fever, small-pox, and the exanthematous fevers are endemic and make frightful ravages in the population every year. However, the local authorities and the medical profession are at length taking some steps to remedy this. They propose to have an infectious diseases hospital, for example.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Sir John Batty Tuke and the Scotch Education Bill.

IT is doubtful whether there will be time to carry the Scotch Education Bill through the committee stage, but should the necessary facilities be provided Sir JOHN BATTY TUKE will propose several amendments of medical interest. Two of these proposals may be quoted. One reads thus: "The school board of every district may, or where required by the education department shall, provide for the medical examination and supervision of the pupils attending schools under their charge to such extent and subject to such requirements as may from time to time be prescribed by any code or minute of the department, and, for the purposes of this section, the school board may appoint such medical inspectors, to be approved by the department, as may be necessary, or may arrange with any local authority acting under the Public Health (Scotland) Act, or with a medical corporation, or with any person or body of persons approved by the department, to conduct the examination and supervision on their behalf." Another is as follows: "The medical officer of health, or any medical officer duly authorised by the local authority for that purpose, may, with the consent of the school board or board of managers of any public or State-aided elementary school within the district, enter such school under the control of such school board or board of managers and if on examination he shall be of opinion that the person or clothing of any child attending such school is infected with vermin or is in a foul or filthy condition so as to be prejudicial to health he shall give notice in writing to the parent or guardian or other person who is liable to maintain or has the actual custody of such child requiring such parent, guardian, or other person to properly cleanse the person and clothing of such child within 24 hours after receipt of such notice. The local authority or the school board or the board of managers may give the use, free of charge, of any place or apparatus which the local authority or the school board or the board of managers possess for cleansing the person or clothing of such child. If the person to whom such notice is given fails to comply therewith within the prescribed time the medical officer of health or medical officer duly authorised as aforesaid shall cause the person and clothing of such child to be properly cleansed and, if necessary for that purpose, may instruct an officer of the local authority, without any warrant other than a certificate from the medical officer of health or medical officer aforesaid, to convey to a suitable place and therein detain such child until such cleansing is effected: always provided that in the case of a female child only a female officer shall be authorised to convey and detain the child for the purpose of cleansing. Any expenses incurred in carrying into effect the provisions of this section may be defrayed out of the public health general assessment. The school board or board of managers of any public or State aided elementary school may refuse to admit into any school under their control any child who shall be certified by the medical officer of health or any medical officer acting under the authority of this Act to be suffering from a contagious skin disorder, and the parent or guardian of any child so suffering who shall fail forthwith, on intimation in writing from the school board, to procure medical advice and treatment for such child shall be liable to a penalty not exceeding 10s. for every day during which he makes default."

HOUSE OF COMMONS

WEDNESDAY, JUNE 7TH.

The Plague in India.

Mr. FIELD asked the Secretary of State for India whether he was aware that in India in 1901 the total deaths from plague were returned at 273,679, in 1902 the number rose to 577,427, in 1903 it reached 851,263, and in 1904 it was 1,022,239; and what steps were taken by the Government for the prevention of the spread of plague.—Mr. BRODRICK answered: I am aware of the lamentable mortality from plague indicated by the figures quoted by the honourable Member. The Government is endeavouring, while necessarily respecting the feelings and the prejudices of the people, to assist them by every possible means to help themselves and to bring within their reach all material means to that end. It is promoting, in the matter of prevention, the more efficient sanitation and cleansing of towns and villages, the destruction of rats and mice, and the means of inoculation. It is enlisting and organising unofficial help by the formation of health and charitable committees, and has defined the duties of municipalities and other similar bodies in respect of giving intelligence, of providing hospitals and free sites for camps, and of succouring homeless wayfarers. On the occasion of any outbreak of plague it encourages and, through its medical and administrative officers, assists the residents to disinfect their houses and property, to isolate the sick, to destroy infected materials, and to evacuate plague-stricken dwellings and sites. It gives compensation for loss of property to the poor and assists them to rehouse themselves. It maintains laboratories for the preparation of fluid for inoculation and for the systematic study and diagnosis of the disease; and it has placed at the disposal of an advisory committee of the highest authority in this country a grant of money for meeting the expenses of a scientific expedition, which is now carrying out further plague investigations in India.

Cases of Necrosis.

Sir CHARLES DILKE asked the Secretary of State for the Home Department whether, in addition to the case of necrosis reported in March, two other cases had occurred recently at the same factory.—Mr. AKERS-DOUGLAS replied: Yes, sir. Two other cases have been reported since from the same factory. One was the case of a woman employed as a boxer of thoroughly dried matches who had a tooth extracted and returned to work directly afterwards without informing the firm and obtaining a certificate of fitness as required by the special rules. The attack was a first attack. The other was the case of a man who had phosphorus poisoning some years ago and had been employed since in other work, latterly as a night watchman. In the latter employment, which is one lying outside the scope of the rules, it would be his duty to visit the dipping and other rooms at night but it is doubtful at present whether the case is one of phosphorus necrosis at all. I am now in possession of reports in all three cases, though the investigation of the third case is not yet complete and in view of the fact that they all occurred at one factory I have called for a special report on the circumstances in which they arose and on the working of the special rules in that factory.

In the Interests of Public Health.

Mr. FIELD asked the President of the Local Government Board whether he had authorised the issue of a circular by the medical officer of health of Tottenham district requesting meat traders to provide forks for the use of intending purchasers to hold and to examine meat; and, if so, what section of the Public Health Act or other statute empowered such action.—Mr. GERALD BALFOUR said: The circular was not authorised by me. I understand that it was not intended as a request which could be legally enforced but rather as a suggestion in the general interests of the public health.

BOOKS, ETC., RECEIVED.

A. R. ELLIOTT PUBLISHING COMPANY, 66, West Broadway, New York.

Tumours of the Cerebellum. By Charles K. Mills, M.D., Charles H. Frazier, M.D., George E. de Schweinitz, M.D., T. H. Weisenburg, M.D., and Edward Lodholz, M.D. Price not stated.

BAILLIÈRE, TINDALL, AND COX, 8, Henrietta-street, Covent Garden, W.C.

The Dental Annual and Directory. 1905. Price 7s. 6d. net.

BLACKIE AND SON, LIMITED, 50, Old Bailey, E.C.

Blackie's Science Readers, Nos. VI.–VII. Lessons on Living. A Reading-book in Physiology and Hygiene. By H. Rowland Wakefield, Science Demonstrator, Swansea School Board. Price, cloth, 1s. 6d.

HURST AND BLACKETT, LIMITED, 182, High Holborn, W.C.

Friedberger and Fröhner's Veterinary Pathology. (Authorised Translation.) Translated by M. H. Hayes, F.R.C.V.S. Edited by John Dunstan, M.R.C.V.S., Professor of Surgery and Therapeutics at the Royal (Dick) Veterinary College, Edinburgh. Volume II. Price 10s. 6d. net.

J. B. LIPPINCOTT COMPANY, Philadelphia and London.

International Clinics. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia, U.S.A., with Collaboration. Vol. I. Fifteenth Series, 1905. Price not stated.

JOHN BALE, SONS, AND DANIELSSON, LIMITED, 83-91, Great Titchfield-street, Oxford-street, W.

Notes on Clinical Blood-pressure Instruments. By E. Birt, M.D. Price 1s.

KIMPTON, HENRY, 13, Furnival-street, London, E.C.

Essentials of Diseases of the Skin, including the Syphilodermata. Arranged in the form of Questions and Answers. Prepared especially for Students of Medicine. By Henry W. Stelwagon, M.D., Ph.D., Professor of Dermatology in the Jefferson Medical College and Woman's Medical College, Philadelphia. Sixth edition, thoroughly revised. Price 4s. net.

Essentials of Obstetrics. Arranged in the form of Questions and Answers. Prepared especially for Students of Medicine. By William Easterly Ashton, M.D., Professor of Gynæcology in the Medico-Chirurgical College of Philadelphia. Sixth edition, revised. Price 4s. net.

Essentials of the Practice of Medicine. Prepared especially for Students of Medicine. By William R. Williams, A.M., M.D., formerly Instructor in Medicine and Lecturer in Hygiene, Cornell University Medical College. Arranged with Questions following each chapter. Price 6s. net.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, E.C.

Exercises in Practical Physiology by Augustus D. Waller, M.D., F.R.S. Part II. Exercises and Demonstrations in Chemical and Physical Physiology. By Augustus D. Waller and W. Legge Symes. Price 2s. 6d. net.

OFFICE OF THE SUPERINTENDENT OF GOVERNMENT PRINTING, Calcutta.

Scientific Memoirs by Officers of the Medical and Sanitary Departments of the Government of India. New Series. No. 15. On a Parasite found in Persons Suffering from Enlargement of the Spleen in India. (Third Report.) By Lieut. S. R. Christophers, M.B., I.M.S. Price Annas 10, or 1s.

PELTON, E. R., 19, East 16th Street, New York City.

Diseases of the Heart and Aorta. By Thomas E. Satterthwaite, M.D., Professor of Medicine in the New York Post-Graduate Medical School. Price not stated.

REBMAN, LIMITED, 129, Shaftesbury-avenue, W.C.

Greene's Medical Examination for Life Insurance and its Associated Clinical Methods. With Chapters on the Insurance of Sub-standard Lives and Accident Insurance. By Charles Lyman Greene, M.D., St. Paul, Professor of the Theory and Practice of Medicine in the University of Minnesota. Second edition, revised and enlarged. Price 17s. net.

SCIENTIFIC PRESS, LIMITED, 28 and 29, Southampton-street, Strand, W.C.

Hints to Nurses on Tropical Fevers. By S. F. Pollard, Sister, Army Nursing Service Reserve, late Sister at Guy's Hospital. Price 1s. 6d. net.

How to Become a Nurse. The Nursing Profession: How and Where to Train. Edited by Sir Henry Burdett, K.C.B. New and revised edition. Price 2s. net.

STANFORD, EDWARD, 12, 13, and 14, Long Acre, W.C.

Handbook of Travel Talk. Being a Collection of Questions, Phrases, and Vocabularies in English, French, German, and Italian. Nineteenth edition. Price 3s. 6d.

Appointments

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.

AUBREY, THOMAS, M.B. Lond., L.R.C.P. Lond., M.R.C.S., has been appointed *pro tem.* Medical Officer for the Bitton District of the Warmley (Gloucestershire) Union.

BRANDER, WILLIAM, M.B., Ch.B. Aberd., has been appointed Resident Workhouse Medical Officer and Medical Officer for the Children's Homes, Middlesbrough Union.

BRAUND, JAMES MONTAGUE, M.R.C.S., L.S.A., has been re-appointed Medical Officer of Health for the Stratton (Cornwall) Rural District Council.

COW, D. V., B.A., B.C. Cantab., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

EARLE, REGINALD ANDERSON, L.S.A. Lond., has been appointed Medical Officer and Public Vaccinator for the Weston-super Mare District of the Axbridge Union.

EATON, OLIVER, L.R.C.P. Lond., M.R.C.S., D.P.H. Camb., has been re-appointed Medical Officer of Health of Exmouth (Devon).

GIDLEY-MOORE, J. B. G., L.R.C.P. Lond., M.R.C.P. Edin., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Ongar District of the county of Essex.

HASSARD, W., M.B. Dub., has been appointed House Surgeon to the Weston-super-Mare Hospital.

HORTON, J. H., Captain, I.M.S., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

KINGSFORD, A. BERESFORD, M.R.C.S., L.R.C.P. Eng., D.P.H. Cantab., has been appointed Second Assistant Anæsthetist at University College Hospital.

MYLES, W. S., B.A., M.B., B.Ch. Dub., has been appointed District Medical Officer and Public Vaccinator, Moora, West Australia.

ROY, S. CHARAN, M.B., C.M. Edin., has been appointed Resident Medical Officer to the Leicester Poor-law Infirmary.

SALISBURY, C. R., M.R.C.S., L.R.C.P. Lond., D.P.H. Lond., has been appointed Anæsthetist to the Metropolitan Hospital.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BIRMINGHAM, ASTON UNION WORKHOUSE AND COTTAGE HOMES, Gravelly Hill.—Resident Assistant Medical Officer. Salary £120 per annum, with apartments, rations, and washing.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—Assistant Resident Medical Officer for three months. Honorarium of 25 guineas.

DEVONPORT, ROYAL ALBERT HOSPITAL AND EYE INFIRMARY.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board, lodging, and washing.

EAST HAM BOROUGH COUNCIL.—Medical Officer of Health for the Borough and Medical Superintendent of the Isolation Hospitals, Convalescent Home, and Schools. Combined salary £400 per annum, rising to £500.

ECCLESALL BIERLOW UNION WORKHOUSE.—Resident Medical Officer. Salary £130 per annum, with board, washing, and apartments.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

GUY'S HOSPITAL MEDICAL SCHOOL.—Lecturer on Physics.

HIGHGATE-HILL INFIRMARY, Upper Holloway.—Assistant Medical Officer. Salary £130 per annum, rising to £160, with rations, apartments, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25.

INDIAN MEDICAL SERVICE, India Office, S.W.—Examination for not less than 14 Commissions.

LIVERPOOL ROYAL INFIRMARY.—Honorary Assistant Gynæcological Surgeon.

MANCHESTER ROYAL INFIRMARY.—Director of the Clinical Laboratory. Salary £200 per annum.

MANCHESTER, VICTORIA UNIVERSITY.—Junior Demonstrator in Anatomy. Salary £100, rising to £150.

METROPOLITAN WATER BOARD.—Director of Water Examinations. Salary £1000 per annum.

NEW HOSPITAL FOR WOMEN, Euston-road.—House Surgeon (female).

NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Honorarium £20, with board, lodging, and washing.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Physician-in Charge of Skin Department.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road.—Dental Surgeon.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon. Salary £100, with board, residence, and washing.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon for six months. Salary at rate of £80 per annum, with board and residence.

SOUTH UIST (SOUTHERN DIVISION).—Medical Officer. Salary £77 10s.

STRAITS SETTLEMENTS, MUNICIPALITY OF THE TOWN OF SINGAPORE.—Assistant Municipal Health Officer, unmarried. Salary £400 per annum.

SUNDERLAND INFIRMARY.—Honorary Surgeon.

SWANSEA GENERAL AND EYE HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, apartments, washing, and attendance.

WANDSWORTH UNION INFIRMARY, St. John's-hill, near Clapham Junction.—Junior Assistant Medical Officer, unmarried, for six months. Salary at rate of £100 a year, with board, lodging, and washing.

WEYMOUTH AND MELCOMBE REGIS URBAN DISTRICT COUNCIL.—Medical Officer of Health. Salary £350 per annum.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Newbridge, in the county of Kildare; at Prescot, in the county of Lancaster; at Coxhoe, in the county of Durham; and at Rhayader, in the county of Radnor.

Births, Marriages, and Deaths.

BIRTHS.

BENTLEY.—On June 7th, at Gladwins, Limpsfield, Surrey, the wife of J. Reginald Bentley, M.B., B.C. Cantab., of a daughter.

MYLES.—On May 7th, at Moora, West Australia, the wife of W. S. Myles, M.B., B.Ch. Dub., District Medical Officer, Moora, of a son.

NIX.—On the 8th June, at Chatteris, Cambridgeshire, the wife of R. E. Nix, M.B. Cantab., a son.

SMITH.—On the 2nd June, 1905, at Sydney, N.S.W., to Aimée Guy Smith, M.B. London, and Guy Smith, of Kalgoorlie, Western Australia, a son.

MARRIAGES.

COCKROFT—LAYCOCK.—At Christ Church, Lancaster, on the 14th inst., by the Rev. M. Ker Cooper, M.A., vicar, George Cleminson, eldest son of the late Wm. H. Cockroft, the Crescent, Hipperholme, and of Mrs. Cockroft, East Villa, Lancaster, to Mary, younger daughter of John Laycock, South-road, Lancaster.

STOKES—YOUNG.—On the 12th June, 1905, at Emanuel Church, Camberwell, S.E., Ronald McClean, L.R.C.P. & S. Ed., L.F.P. & S. Glasg., &c., son of the late W. J. Stokes, R.E.D., to May Angus, daughter of the late William Young of Nairne.

DEATHS.

CLARKE.—On June 11th, at Buckingham-terrace, Edinburgh, James Ferguson Wyllie Clarke, M.A., F.R.C.S. Edin.

MACNUTT.—On June 12th, George Augustus Macnutt, M.D., M.R.C.S., &c., in his 69th year.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

KRUGERSDORP AS A HEALTH RESORT.

WE have received from Mr. W. Gem, the medical officer of health of Krugersdorp, the following interesting particulars:—

Krugersdorp, so named after the late President of the Transvaal Republic, is the chief town on the West Rand. It is situated on the northern slope of the Witwatersrand, with an uninterrupted view of the Magaliesburg range of hills, and is about one hour's run from Johannesburg, a good train service affording easy intercommunication with that city. The town is divided by wide streets, macadamised throughout, and with a row of eucalyptus trees running down each side. In the centre of the town there is a large market square, also surrounded by gums. The town council is of a most progressive type. There is an efficient sanitary service and the pail system has been adopted and the excreta and refuse are removed daily and carted about two miles out of town and there disinfected and buried. The climate of Krugersdorp and the West Rand in general is second to none. The town lies in subtropical latitudes, yet its height above the sea level (5800 feet) insures for it invigorating and pure air at all seasons. The summer heat, at no time unendurable, is tempered with frequent and mild rains, the heat rarely exceeding 80° F., and the nights are cool and pleasant. In winter there is a still, cold, dry atmosphere, so that the bracing effects of the cold are felt without the irritation produced by too rapid evaporation from the respiratory surface. Snow seldom falls, while ice is only found in thin layers. The cloudless and azure skies are characteristic. The absence of violent winds which in other parts of the Transvaal and Cape Colony are a prevailing element enhances the value of the West Rand as a health resort. The water is obtained from gravel hillocks held up by underlying clay and is pure and wholesome. It has been tested and analysed on several occasions with a most favourable result. The town is shortly to be lighted by electricity, improvements are to be made all round, and further railway communications are anticipated in the near future. There are various places of interest in the locality. A sanatorium will be constructed in a short while just outside the town with a good approach road.

Now that the agricultural department is placing farming on a scientific basis and importing stock there will be a supply of good fresh meat and milk which have been unobtainable up to the present. Several well-qualified medical men have settled in practice at Krugersdorp. The great feature of Krugersdorp is its low death-rate and more especially from chest complaints. Cases of phthisis in its earlier stages or consolidation of the apices of the lungs do remarkably well but when it has gone on to the cavernous stage it is highly undesirable for a medical man to send such patients out here, far away from home and friends and the luxuries of England. A few cases of cavernous phthisis have done well under various treatments, such as inhalations of creasote, guaiacol carb., cyllin, and other antiseptics, but such cases should not come out here, as the diet to be obtained is not suitable for them.

ENTERPRISE.

AN enterprising firm of tobacconists appears to be circularising the medical profession and making offers to let medical men have certain cigars at a low price if they will be so obliging as to recommend the brand to their patients. We hope that the firm will find medical men not readily seduced into recommending their wares. The cigars may be good enough, but either they are worth more money than is asked of the medical profession or they are not. If they are worth more the medical profession is being bribed; if they are worth less it is being exploited and neither position is to be coveted.

THE COUVADE.

To the Editors of THE LANCET.

SIRS,—Much curious information upon the subject of the "couvade" cognate to the inquiry of your correspondent may be found in "The Mystic Rose," by E. Cawley, M.A., London, Macmillan, 1902.

I am, Sirs, yours faithfully,
C. J. W.

AIR-BORNE INFECTION FROM SMALL-POX HOSPITALS.

To the Editors of THE LANCET.

SIRS,—Your leading article in THE LANCET of June 10th prompts me to ask whether the gases escaping from the ventilating pipes connected to "waste water," "soil pipes," and drains by means of the present universal (and in my judgment entirely wrong) system of open tops do not exert even a more powerful influence in spreading small-pox, fevers, &c., than the moving in and out of patients and those attending upon them?

I am, Sirs, yours faithfully,
June 12th, 1905. SANITARY ENGINEER.

POSTAGE STAMPS AND CHARITY.

For a great many years the myth that the collection of a million used postage stamps would effect some charitable end has had almost universal acceptance. An arrangement has now been made, however, by which for the future for every million stamps collected two sick children will be admitted to the North-Eastern Hospital for Children, Bethnal Green, London, E., and the name of the collector of each million stamps will be inscribed on a special list placed in a prominent position on the walls of the hospital. Particulars of this scheme may be obtained of the hospital secretary, Mr. T. Glenton-Kerr, or of the Editor of the *Girl's Realm*, 7, New-court, Carey-street, London, W.C.

TO DEADEN SOUND.

To the Editors of THE LANCET.

SIRS,—Messrs. Clay and Abraham, chemists and druggists, of Liverpool, have a most effectual and comfortable ear stopper, made of rubber and priced 1s. a pair. As a night superintendent I wore them for two years and found them most useful.—I am, Sirs, yours faithfully,
June 9th, 1905. A. G.

To the Editors of THE LANCET.

SIRS,—Your correspondent might with advantage try plugging the ears with small ivory balls. These have been successfully used for the relief of insomnia and are, I believe, used in France by artillerymen during gun practice.

I am, Sirs, yours faithfully,
June 10th, 1905. F. R. WALTERS.

Dubious is advised not to place his diploma at the service of a company. Without entering into what might be his legal position we may say that the General Medical Council would view his conduct with disfavour.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (19th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (20th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (21st).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (22nd).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.).

FRIDAY (23rd).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Royal Ear (10 A.M.).

SATURDAY (24th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

WEDNESDAY (21st).—ROYAL MICROSCOPICAL SOCIETY (20, Hanover-square, W.).—8 P.M. Papers:—Mr. A. E. Conrady: Theories of Microscopical Vision.—Mr. E. M. Nelson: The Tubercle Bacillus.

SATURDAY (24th).—NEUROLOGICAL SOCIETY OF THE UNITED KINGDOM (National Hospital, Queen-square).—10 A.M. Clinical Cases will be shown.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (19th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. H. Sequeira: Clinique. (Skin.) 5.15 P.M. Mr. L. Thomas: The Control of Hæmorrhage during Operations.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Ll. Williams: Etiology of Dental Caries.

TUESDAY (20th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. W. Ewart: Clinique. (Medical.) 5.15 P.M. Mr. W. G. Spencer: The Treatment of Diseases of the Knee-joint.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. D. Hood: Clinical Aspects of Pneumonia.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Sir W. Gowers: Some Symptoms of Tabes.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Mr. W. Edmunds: Joint Affections in Childhood.

WEDNESDAY (21st).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. P. Paton: Clinique. (Surgical.) 5.15 P.M. Dr. A. P. Luff: The Diagnosis and Treatment of some of the Forms of So-called Rheumatism.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Dunn: Ametropia, its Causation, Diagnosis, and Treatment.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—3 P.M. Lecture:—Dr. Horton-Smith Hartley: Pneumothorax.

THURSDAY (22nd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Mr. D. Armour: Pain in Acute Abdominal Disease.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Edwards: Rectal Disease.

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Dr. Thursfield: Enuresis.

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture:—Dr. Roberts: Cases from the Wards.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Fitzroy-square, W.).—5 P.M. Lecture:—Dr. T. D. Lister: Pre-Tuberculous Affections in Early Life. (Post-Graduate Course.)

ROYAL INSTITUTE OF PUBLIC HEALTH.—5 P.M. Colonel D. Bruce, R.A.M.C.: Sleeping Sickness.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Dr. Giles: Hæmorrhage during Pregnancy.

FRIDAY (23rd).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. J. Horne: Clinique. (Throat.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Abraham: Cases of Skin Disease.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. B. Russell: Friedreich's Ataxy.

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METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 15th, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rainfall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 9	29·90	N.E.	0·01	67	56	52	52	54	Raining
,, 10	29·91	N.E.	0·16	85	66	50	52	53	Overcast
,, 11	29·81	N.E.	0·74	63	62	53	56	57	Raining
,, 12	29·80	E.	0·30	98	65	57	57	60	Cloudy
,, 13	29·83	S.E.	0·03	121	71	54	57	59	Cloudy
,, 14	29·90	S.E.	...	124	72	53	58	64	Fine
,, 15	29·75	N.E.	...	114	70	51	51	59	Fine

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